AMERICAN VETERINARY REVIEW.

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EDITORIAL.

THE VETERINARY ARMY CORPS.

If the veterinary profession had not suffered so many unexpected disappointments when success was all but assured, the REVIEW would feel like throwing its hat high in the air and calling for three lusty cheers for the Veterinary Corps of the United States Army, so nearly an accomplished fact does it now appear. It passed the House of Representatives on December 5 by a vote of ayes 80, noes 72, and now goes back to the Senate for concurrence. That body having already given its sanction to the veterinary section of the army bill, it would be a travesty upon consistency should it now reverse itself, and fail to agree to the House amendment. But the alert Committee of the A. V. M. A. is taking no chances, and has thrown its entire battery against those who are to do the voting. So thorough has been its work that the junior Senator from New York addressed himself to the Resident State Secretary with an avowal that the veterinary surgeons of New York State have deluged him with so many appeals that he cannot reply to them individually, but pledges his earnest consideration of the bill which called forth such a united effort. While we have no knowledge to that effect, we presume the profession in other States has been equally active, and if the supposition is correct the cause will be utterly irresistible when it is reached in the Senate, which will probably be during the first half of January. The last ditch will have been virtually crossed when the Sen-

ate shall have stamped its approval upon this amendment, for the President has expressed his sentiments in favor of it, and there will be no difficulty in securing the executive sanction.

We, therefore, congratulate the profession upon the gallant and deserved victory which seems imminent, the country upon the wisdom of its action from an economic standpoint, as well as upon its tardy recognition of a profession which is deserving of the positions of rank thus conferred, and the Army upon its acquisition of ranking officers the peers of any in point of intelligence and gentlemanly demeanor.

Elsewhere will be found a *verbatim* report of the discussion of the amendment in the House, and while all will be forgiven in the general rejoicing, there are some who have earned and will receive the unstinted applause and support of the veterinary profession of America.

PROTECT THE LAWS WE HAVE.

Veterinarians in all States whose legislatures have adopted laws prohibiting all but registered men from practicing the art of veterinary medicine ,and surgery should not rest under the feeling of security that, having obtained the coveted statute, they are forever free from all semblance to the conditions which existed prior to the enactment of the protective laws. There is nothing to prevent repeated attempts to reopen the registry books to those in whose faces they were shut; and such efforts are, as a matter of fact, being made at every session of the legislatures, under many different forms and disguises, both as general and special legislation. We believe, however, that no State in the Union has ever, even remotely, approached New York in the frequency or persistency with which the integrity of a sovereign law has been sought to be nullified. There has never passed a year during which there was not one or more bills introduced to permit Tom, Dick and Harry to become legally registered practitioners of veterinary medicine, although such men were expressly prohibited by the existing law from performing such a function. We do not believe that the medical practitioners,

our dental cousins, nor our friends of the legal fraternity, are called upon to bestow such incessant watchfulness over the laws which were made to bar charlatanism from their ranks; our science must either be a magnet or else it is regarded as an easy mark by those who wish to break through the fences of its legal enclosure. It would also seem that repeated failures to effect an entrance into the forbidden pasture have no influence in dampening the ardor or the hopes of those whose professional education is less than that which is prescribed by the New York law; they come and they come again. But every year the profession is better prepared to resist the attacks. The State Society feels that the responsibility to maintain the laws intact rests upon it, and it has placed itself in position to fight every measure that in any degree challenges the integrity of our statutes. Its Legislative Committee is in touch with the daily proceedings of the Senate and the Assembly, and upon the first approach of danger an alarm is sent forth to an organized force of earnest men in every county of the State which has a representative veterinarian within its borders, and the entire machinery of the State organization is at once thrown into action. There will not be a Senator nor an Assemblyman who will not be appealed to by a veterinary constituent to destroy the bill which menaces our laws. So that if all do their duty there is no chance whatever of a pernicious bill reaching a favorable report from the committee to which it has been referred.

These remarks are prompted at this time, not only to inform the profession of other States what appears to be the best means of coping with this important matter, as learned from continuous experience, but to warn the profession of the Empire State that, notwithstanding its apparent security through organized resistance and its capacity to repel such extraneous propositions, word reaches us that the greatest fight in the history of the Society must be made at the present session of the legislature. Last year the clamorings of the malcontents were appeased by an act which the Society permitted to become a law, since its consummation involved the unanimous approval of the Board

of Veterinary Medical Examiners before a candidate could become licensed; and in every instance that approval has not been passed to those whose qualifications were lacking. Numerous applications have been made, and their failure has been followed by threats of legal prosecution of the Board; and it has been openly declared that this year the bars will be lowered for the admission of every graduate of veterinary medicine, whatever the character of his alma mater may be. To be forewarned should mean to be forearmed, so that when their measure makes its appearance it will be struck such a staggering blow that its sponsors will know from the beginning that their unworthy cause is lost.

To illustrate the effect of perfect organization, witness the following letter of Senator Depew in the matter of the Veterinary Corps in the Army. The Resident State Secretary of the American Veterinary Medical Association, Dr. Kelly of Albany, who is also the chairman of the Legislative Committee of the State Society, sent out a circular letter to the profession asking the members to use their influence with Senators Platt and Depew to pass the Army Bill. Dr. Kelly furnishes us with Dr. Depew's letter to him, which speaks volumes:

UNITED STATES SENATE, WASHINGTON, D. C., Dec. 19, 1900.

Wm. Henry Kelly, V. S., Resident State Secretary, American Veterinary Medical Assc., 195 Western Ave., Albany, N. Y.

DEAR SIR:—I am receiving such a multitude of letters from veterinary surgeons throughout New York State that it is impossible for me to answer them individually, so I take this method of informing them through you that the matter of the Veterinary Corps in the Army will receive my earnest consideration. Yours very truly,

(Signed) CHAUNCEY M. DEPEW.

THE DEALER'S SIDE.

It is simple justice to give both sides to a story, and therefore we gladly give space to the following from the New York *Herald* of recent date:

FEW SOUND HORSES SOLD AT AUCTION ARE WARRANTED SOUND OWING TO STRICT INTERPRETATION OF THE TERM BY MANY VETERINARIANS.—Amateur horsemen who attend the big auction sales in New York often express surprise that so few animals are warranted sound, and a great many intending bidders are doubtless stopped by the omission of

such a warranty in the sale catalogue or in the sign on the auctioneer's box, which announces the representations under which each horse is sold. It has been said that not one in twenty of all the horses sold under the hammer in the metropolitan market is warranted sound. Nearly every firm in the commission business advises its consignors not to give such a warranty, regardless of whether the horse sold is believed to be sound or not.

The term "sound," as interpreted by many veterinarians, means too much, according to the dealers, so much, indeed, that not one horse among a hundred could be certain of passing inspection. Any insignificant blemish or defect that a practical horseman would see and disregard is frequently enough to "turn down" a valuable animal, and when once a horse has been officially rejected as "unsound" his market price is cut in two. The word condemns him without much regard to whether his shortcoming is a harmless splint or scar, or a spavin or something equally serious.

A case in point:—At one of the oldest and best known auction marts in New York not long ago a fast and handsome road horse was put up for sale under a full warranty as to soundness and was sold for $575. When inspected by the veterinarian he was rejected as "unsound," and was accordingly returned to be resold for the account of the original consignor. That the horse was practically sound was not denied, but he failed, nevertheless, to fill the bill as an absolutely sound horse. At the second sale he brought a little less than one-half the original price, a Brooklyn horseman getting him this time for $250. After having used him daily for nearly a month the present owner of the horse now says he would have been cheap at $700. Since the second sale took place a competent veterinarian has pronounced the horse to be absolutely sound.

At another sale a consignor, who was not familiar with the full import of a warranty of soundness, sold a pair of horses under such a representation. They failed to pass after bringing $1200, and were put up again and sold for $600. The second buyer, who saw for himself that nothing of consequence ailed either horse, was able to resell the pair at private sale for $1000 within twenty-four hours.

While we are of opinion that a great injustice is done the dealer when a horse is condemned on account of an "insignificant blemish or defect" that will not interfere with the usefulness or value of an animal for the purposes for which he is purchased, yet we would emphasize the importance and professional duty of the practitioner in discriminating between this class and other so-called "insignificant blemishes and defects" that do impair, or are likely to impair, the usefulness and market value of an animal.

It is right at this point where the competent practitioner's opinion is of greatest value to the purchaser. It is for the practitioner to determine what is harmful and what is unharmful.

Any horseman can recognize a well developed spavin or ring-bone, but it often taxes the judgment of the most experienced practitioner to recognize incipient pathological processes that render a horse unsound. W. H. L.

ORIGINAL ARTICLES.

PROPHYLAXY OF INFECTIOUS DISEASES OF DOMESTIC ANIMALS.

By Prof. Ed. Nocard,* France.

(*Concluded from page 660.*)

(2) PROPHYLAXY WITH INOCULATION OF PURE OR WEAKENED VIRUSES.

We have arrived at the second group of means to realize prophylaxy.

Many infectious diseases do not return a second time; once removed from a first attack it is very likely that it will not return a second time. One has become refractory to that disease. It is the well known case of small-pox. It is the type among diseases that do not return; it is so also in cases of pleuro-pneumonia, of variola in sheep, rinderpest, anthracoid diseases, rouget of swine, cholera of fowls, rabies, Texas fever, horse sickness, etc. It is very rare in many of these diseases to observe a return of the disease, because most of the affected animals die. Rabies is always fatal; recovery from rinderpest, anthrax, chicken cholera, rouget, horse sickness, is rare and very exceptional. But those who have the good fortune to recover are then protected from a new attack; they sustain without trouble the inoculation of a virus which kills all fresh animals.

These facts, known from time immemorial, have suggested the idea of producing diseases artificially, to avoid the fatal affection. This course presents several advantages: the disease

* Extract from *L'Ingenieur Agricole de Gembloux.* Translated by A. Liautard.

produced by inoculation is often much less serious than the natural disease; it lasts but a short time, can be given at the same time to all the animals exposed to contagion and which would become sick, little by little, one after the other, thus keeping up the disease in the invaded barn; by this method the duration of sanitary measures, always vexatious, troublesome and expensive, is reduced.

In the last century it was a common practice, especially in England, to inoculate small-pox to young folks. They had so many opportunities of contracting the disease that they consented to run the risk of the inoculation. A certain number would die, but much less than in a time of epidemic.

This practice lasted until the days of Jenner, when he discovered vaccination and gave its inestimable practice to humanity.

Direct variolization, however, still exists in some countries. In Algiers, for instance, the French have not yet succeeded in substituting vaccination for it. The Arabs remain attached to the traditions of their ancestors. With the fatalism of their belief they prefer to run the danger of the frequent accidents of variolization rather than adopt the practice of the Christians.

Small-pox in sheep is a disease similar to human small-pox; it resembles it so much that some authors call it improperly "swine variola." It has for a long time been known that sheep recover from it, and will not again take it, and that by inoculation of its virus healthy animals can be protected.

Clavelization is analogous to variolization; like it, it gives the disease, but under a less serious form than natural contagion.

Inoculation of the virus is done at the extremity of the ears or of the tail; the disease develops in all the animals at the same time, and after five weeks, at the most, general health has returned.

Clavelization has the objection of creating centres of contagion and of causing in some sensitive breeds a mortality which may go up from 2 to 10 per cent. It is for that reason that pre-

ventive clavelization is not allowed in France; on the contrary, it is prescribed for all flocks when the disease has made its appearance, because the severity of the disease and the duration of the sanitary measures imposed by law are reduced.

But there are countries where variola is very mild, where affected sheep remain with all the appearance of health. Such is the case in Algiers. It is then indicated to apply preventive clavelization upon all sheep for exportation; that alone will give the importing countries security, and it is without any danger for vaccinated sheep, there being absolutely no losses caused by the operation, therefore the owners of animals have every reason to have their stock vaccinated.

Herbivorous animals bitten by mad dogs die in great numbers. I have seen 27 cows succumb to the disease out of a herd of 30, which had been bitten by a rabid dog—the owner was ruined.

The appearance of rabies can be prevented by injecting the rabid virus, as it is furnished by the mad animal, into the veins of the bitten patient. This will succeed even several days after being bitten. The operation does not succeed in carnivorous animals. But in herbivorous (sheep, goats, cattle, and even horses) immunity is obtained after several injections.

Foot-and-Mouth Disease gives a certain amount of immunity to animals which have recovered from a first attack. But its duration varies very much. This, with the excessive contagiousness of the disease, makes it so dangerous and does not permit of an efficacious prophylaxy. Nevertheless, when foot-and-mouth disease appears in an establishment where there is no chance to limit the spread of the disease, it is indicated to have all the animals take it; the disease is thus made less serious, its duration is shorter; it is an economy of time and of money. The infection is produced by rubbing on the tongue of the healthy animal a piece of cloth which has been passed over the tongue of a sick animal.

One of the first applications of this method is of Belgian origin. It is due to Dr. Willems, of Hassell. In 1848, when

experimental medicine was in its infancy, Willems demonstrated the benefit that could be derived from inoculation against contagious pleuro-pneumonia. He proved that the disease could be inoculated, and that when it was in the peripheric regions, the ear or the tail, the lesion produced was ordinarily mild ; finally, he demonstrated that after recovery the animal was refractory to the natural disease. This great discovery has had the fate common to many others, and it was specially in Belgium that it was contradicted.

Numerous experiments made in every country upon large numbers of animals have proved the entire efficacy of the method; the inoculation of Willems applied as a preventive upon animals free from the germ of the disease, protects them absolutely against the natural infection. This inoculation has found its way into the French Sanitary Commission, which orders it upon all animals in an infected commission stable.

Unfortunately, in an infected stable there are many animals that have the germ of the disease; for this reason inoculation cannot always give good results: to give all that it can do, it must be applied as a preventive.

To inoculate as a preventive the virus of rinderpest, anthrax, rouget of swine, Texas fever, or horse sickness must not be thought of; it would give as serious a disease as the natural one and kill most of the inoculated.

* * *

The discovery of vaccine is the fact of a lucky hazard, but a luck which happens only to those who are worthy, those who know how to see and understand the meaning of what they see. The service it has rendered cannot be appreciated, and it is but justice to consider Jenner as one of the greatest benefactors of humanity. But the discovery of Jenner remained an isolated fact. It belonged to another genius, our great and immortal Pasteur, to generalize the principle of vaccination, to immunize at will against diseases much more serious than small-pox itself.

To take a virus whose inoculation is fatal, cultivate it arti-

ficially, modify it to such an extent that it gives to inoculated individuals only a benignant disease, a disease readily cured which renders animals refractory to natural infection, always fatal to the witnesses, such is the capital work of Pasteur in medical science.

The attenuation of the viruses and vaccination by attenuated viruses has been the greatest biological discovery made for centuries.

You all know the celebrated experiments of Pouilly-le-fort.

The Agricultural Society had offered to Pasteur to make public the proof of the unlikely facts he had announced. It had collected 50 sheep from districts where anthrax did not exist. Of these 50 Pasteur was to vaccinate 25, the others were to be used as witnesses. All the 50 were to be inoculated with the same unweakened virus; the 25 witnesses were to die in 48 hours, while all of the vaccinated were to remain well. The experiment was carried out and two days after the testing inoculation the 25 witnesses were dead; none of the vaccinated seemed to be sick.

This is an undeniable demonstration of all that Pasteur had advanced. This experiment marks a memorable date in the history of microbiology: it is the triumph of the method. Now, the proof is made in an incontestible way of the value, theoretical and practical, of the new science; unbelievers can no longer discuss it; those who were hesitating—and they were legion—carried away by universal enthusiasm, have joined the small troop of the first hour, and now it is an army. Now we will be able to work in peace and to collect all the fruits of victory; all the work prepared by the Master is going to be continued, and the gathering of the discoveries he has opened to us will be carried out. * * * Indeed, they are becoming so beneficial that they have gone beyond all expectation, and so numerous that they can scarcely be counted.

The work of Pasteur in medical science goes back to 1876—not yet 25 years ago. It has provoked such change that it can be said that nothing like it has been produced in twenty centu-

ries and this change has been so fecund and so beneficial that in these twenty-five years medicine has made more progress than it ever made—etiology, hygiene, sanitary police almost entirely renewed; hospital gangrene, gangrenous septicæmia, purulent infection, puerperal fever, chased from the hospitals, surgery provided with such security that every audacious operation is permitted; prophylaxy of infectious diseases based on the marvelous discovery of the administration of viruses and of the vaccination with weakened viruses; the obscure mystery of immunity almost entirely revealed; the serum of immunized animals applied—with what success—to the treatment of the most dangerous diseases; all this unconquerable scientific group proceeds from Pasteur, and it can be said that we are only at the beginning of a new era which history will name after him. (Repeated applause.)

The medicine of animals was the first to benefit, and that widely, by the great discovery of the vaccination of Pasteur.

Anthrax diseases in all their forms, rouget of swine, those enemies of twenty centuries which prevailed in the same regions, periodically ruining them, in spite of all the constant and powerless efforts of veterinarians. Preventive vaccination has mastered them, and when it has been systematically applied the diseases have disappeared, to such an extent that there scarcely remains a trace of the losses they caused in other days.

During the last years human medicine has also benefited by this great discovery. Hafkine, a student of the Pasteur Institute, who practices in British India, treats the plague and cholera with inoculations of attenuated virus, and we have read in the newspapers that 60 per cent. of the soldiers in the English army received before leaving for South Africa similar inoculations against typhoid fever. This is a new application of this great discovery.

* * *

We do not know yet how to immunize animals against glanders and tuberculosis; perhaps we never will, for they are diseases that may be again contracted. Glanders may be cured,

also tuberculosis, but the recovered animals may again take the disease as if they had never had it; therefore it is difficult to see how immunization can be obtained. But if we cannot hope to render animals refractory, we can at least with tuberculin and mallein make an early diagnosis of those diseases, when the animals have only the germ and when no external sign indicates their existence. We can then isolate them and arrest the progress of the disease. It is upon the separation of the diseased that all the prophylaxy of these serious affections rests.

I shall not insist any longer upon those points which have already been treated at length here, in the Congress of 1885. I wish only to mention a new example of the efficacy of separation.

Some years ago I was called to apply tuberculin on a number of Durhams. It was very interesting because the owner had shown himself a great adversary of the method. It had been severely criticised. At a given time, however, he asked me to apply the test on his stock. The results were positive. Out of 51 animals 27 could certainly be pronounced tuberculous and 3 were doubtful; more than 50 per cent. of the herd. Some of the animals were killed, and the post-mortem having confirmed the diagnosis, the owner confessed his error, and was willing to have what was necessary done. The healthy animals were then separated from the sick and kept in another stable.

According to the doctrine of non-heredity of tuberculosis the calves born of tuberculous cows were to be kept separate from their mothers; the correctness of this theory was fully justified, as in three years none of the animals born of tuberculous mothers, 23 in number, have become diseased. As an instance, here is an establishment infected seriously which in less than three years has returned to the original number of animals without the necessity of purchasing a single animal from outside. This is what can be obtained if it is wanted. It is for you to appreciate and recommend it.

I do not overlook the fact that in practice the general application of those measures is full of difficulties. However, it is

to the interest of every one to apply it for himself, and in this way the great losses due to this disease, which are constantly increasing, will be suppressed.

Pasteurian vaccination has then rendered unappreciable service to agricultnre in every country; the vaccination of animals is counted by hundreds of thousands throughout the entire world. Yet it cannot be applied in all cases; to give the full effect it must be done as a preventive—that is, to animals which have not yet resisted the germ of the disease; they do not grant immunity except after a certain length of time—which is never less than 20 days—necessary for immunization.

Already noticeable in braxy in sheep, the requirement becomes still more serious in cases of rouget, whose march is so rapid and its effects so serious. If we wait for the disease to appear it is too late, as during the 20 days required to obtain immunization all the animals will have died. We will see directly how to remedy this by resorting to serotherapy.

(3) PROPHYLAXY BY SEROTHERAPY.

This is not the place, nor is there time to explain to you the scientific principles of serotherapy. What is important for you to know is that for many infectious diseases the blood of immunized animals, those which have been vaccinated and saturated with virus, contains substances which are able to destroy the virus or prevent its development, or neutralize the effect of the toxines that it secretes, in such a manner that if the serum is injected under the skin of a healthy animal, it is vaccinated against the inoculation of the virus in doses which are always fatal to the witnesses. You all know the marvelous results obtained by this method in the treatment of diphtheria. The important thing is to know that the serum of an immunized animal can act as a vaccine; it acts quicker than attenuated virus, and its action does not last so long. It can be introduced even after the virus has entered the organism and sometimes after the first manifestations of the disease and still act; when from 5 to 10 cubic centimetres are injected under the skin, a little swelling is observed, which in a few minutes, as the serum

is absorbed disappears, the effect produced is immediate; there is this great advantage. But the action of the serum is temporary, it lasts but a little while, 15 days, three weeks at the most; nevertheless, you can observe the great advantages that the serum of immunized animals can render in a stable full of pigs where rouget breaks out. You have had a few cases; you are quite sure that most of your animals will die. In resorting to the serum you can be certain that those that are still hearty are immunized and protected from all danger, and not only those which have no symptoms yet, but also those which are already diseased, as the serum also acts as a curative. The immunity given will not last long, but you can complete the action of the serum and make it more lasting by making a second inoculation a few days later, not with serum, but with pure non-deteriorated virus.

By this method one is certain to arrest the mortality in cases of rouget. This improvement on Pasteurian vaccination will render great service. It is due to MM. Loxens and Schultz, but especially to Mr. Leclainche of Toulouse.

The same method can be applied to *symptomatic anthrax*. Rinderpest can also be treated with success. It has also been applied in several infected countries. The valuable works of Koch, Turner, Theiler, Danisz and Rader has enabled various States of South Africa to overcome the scourge which threatened the bovine species in that country with complete extinction. Nicolli and Adil Bey have obtained the same results in Turkey. Yersies, Traimbault and Carré in Indo-China, and Mad Sieber in Russia. It is an immense triumph over the most serious and most feared disease of occidental Europe.

Mr. Lignierès has shown that antistreptococcic serotherapy is the best mode of treatment for anasarca of the horse.

Animals immunized against tetanus give a serum which possesses a wonderful activity. Inoculated preventively in infinitesimal doses it protects surely against the natural disease. Unfortunately this serum is most often powerless to prevent the progress of a declared case of tetanus. When an animal has

that disease there is but little chance of its recovery. The tetanic toxine produced on the surface of an infected wound is absorbed at once and so acts upon the nervous cells that it alters them in an irremediable way; and when the first symptoms appear it is not the beginning of the disease, but of the end. It is too late to cure, and if the dose of absorbed toxine is sufficient to kill, you may use all the serum you wish, it will not act. On the contrary, if you use it as a preventive in almost insignificant doses, 10 cc. for a 1000-pound horse, the horse will be protected. But tetanus, as you know, like anthrax and rouget, is a disease of the soil; it is the sad privilege of some regions; there are countries which have tetanus as well as those which have anthrax. In these, cases of tetanus are so frequent after surgical operations that veterinarians do not dare to perform them. The use of serum has removed all danger. Veterinarians and owners of animals have a security which was wanting for a long time. I have published the result of several thousand observations all gathered from severely infected districts; not one of the 4000 animals treated by this method has taken lockjaw.

There is no discovery which has been accepted and has spread so rapidly as this, and there has been no trouble, as every one knew of the dangers of the disease. The injection protects from a great risk, the expense is trifling and severe losses are spared.

Tetanic serotherapy is also the best mode of treatment for lockjaw; if the serum does not always succeed in curing, there is no doubt that if recovery takes place, it is quicker and the convalescence is shorter. There is every advantage then in using the serum, providing the owner is not told of a sure recovery, but the only chance of cure is by resorting to this mode of treatment.

In animals powerfully immunized against pleuro-pneumonia serum has also preventive and curative properties; but the short duration of the immunity that it gives does not allow us to substitute it for inoculation. It would be better to begin first

by inoculation and wait until the first manifestation of the disease appears to inject the serum. This, it may be said, is interesting only to the theoretical point of view.

Finally, serotherapy has also been tried for the treatment of foot-and-mouth disease. You know that the Imperial Government has appointed a commission to inquire into the means of immunizing animals against that disease. You also know that this commission and its president, Dr. Loeffler, have obtained in their laboratory surprising results; they have demonstrated that animals immunized against foot-and-mouth disease give a serum, which mixed with virus, can be inoculated without danger to healthy animals and give them immunity. These animals are resistant to natural contagion. But the truth of the laboratory is not always that of practice; it is something different to make experiments where one is master of every condition in which he operates and that applying to practice the results obtained in the laboratory. You know that seraphine (a mixture of serum and virus) has been tried extensively in many countries, and that the results have been such that Loeffler was compelled to stop the inoculations to undertake the further studies. There is not the shade of a doubt that Loeffler will ultimately succeed in his researches and that on that day he will have rendered to the agriculture of the world a priceless service.

By this rapid examination you can, gentlemen, judge of the progress which has been realized in a few years in the medicine of animals.

It rests with you to vulgarize the knowledge of those methods and to promote their application: veterinarians will prove to you, devoted collaborators, that they are well prepared for the work.

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DR. J. MILLER, for a number of years in charge of government inspection at Ottumwa, Iowa, announces that there is a good opening there for a practical veterinarian.

ANTISEPTIC THERAPEUTICS.

By J. F. Winchester, D. V. S., Lawrence, Mass.

Read before the American Veterinary Medical Association, Sept. 6, 1900.

(*Concluded from page 668.*)

In closing this paper I shall digress from my first statement that new material would not be introduced, and will call your attention to some facts by Dr. A. W. Balch and Mr. W. R. Brinckerhoff, of the Harvard Medical School, relating to a "Possible Cause of Azoturia," and the "Pathology of Azoturia."

A POSSIBLE CAUSE OF AZOTURIA.

A. W. Balch (Laboratory of Pharmacology, Harvard Medical School).

The similarity between certain of the symptoms existing in the disease azoturia and those commonly found in lead poisoning seemed to make the chemical examination of urines and tissues in these cases desirable.

Examination of the urines from both azoturia cases and normal horses showed the presence of lead in several instances, although negative results were also obtained in both the normal and pathological cases. Chemical examinations were then made of brain, liver, spleen, kidney, and psoas muscle whenever possible, in order that the distribution of lead in the system might be studied.

Organs were taken from normal horses and those in which death had followed azoturia, pneumonia and colic. As in the urines, lead was found in the tissues of cases other than azoturia, but the amounts were much larger and the lead was much more widely distributed in the azoturia cases.

The quantity found in several of these cases, notably the livers, was very large indeed, as shown approximately by the final tests employed, while in cases other than azoturia a large amount was never found.

The qualitative results have been placed in tabular form, but the quantities could not be expressed, as we have no method for accurately determining these small amounts of lead.

ORGANS FROM AZOTURIA CASES.

	Brain.	Liver.	Spleen.	Kidney.	Psoas.	Urine.	Blood.	
12		+	+	+	+	—		
17		+		—		+		
22	+	+	+	+	+	+	?—	Elimination of lead increased by potassium iodide.
23	+	+		—		—		Lead found in urine after potassium iodide.
26	+	+	+	+	—		+	
33		+	+	+	+			
35	+	—	+	—	+	—	+	
37	+	+	+	+	+		+	

ORGANS FROM CASES OTHER THAN AZOTURIA.

	Brain.	Liver.	Spleen.	Kidney.	Psoas.	Urine.	Blood.	
25		+	—	+	+	—		Pneumonia.
27		—	—	—	—			Runaway.
28	+	+ —	—	+		—		Some interstitial change in kidney. Broken leg.
34		+	—	—	+			Colic.
36	—	—	—	—		?+		Colic.
38	—	+	—	+	—			Colic.

Urines.	Azoturia.	Urines.	Normal Horses.
1. +		8. —	
2. +		9. +	
3. +		10. —	
4. +		11. —	
5. —		13. +	
6. +		14. +	
7. +		25. —	
12. —		28. —	
15. —		32. —	
16. +			
17. +			
21. +			
22. +	Increased by potassium iodide.		
23. —	Found after potassium iodide administration.		
24. —			
29. —			
30. —			
31. —			

The results of chemical examination of the spleen are particularly noticeable.

In every case of azoturia lead was found in the spleen, while it was found in none of the other cases examined.

Potassium iodide was administered in two cases of azoturia, numbered in our tables 22 and 23.

In case 23 no lead was found before the administration of potassium iodide, but after its use very large tests were obtained.

In case 22 the amount eliminated was greatly increased.

Lack of material prevented similar experiments in normal horses. For examination of urine about one litre was used in each case. For tissue examination one-half the brain, weighing when fresh about 300 G. or dried 50 G., and of other tissues 300 G. fresh or 100 G. dry, were used. The tissue or dry urine was treated with an excess of nitric acid and allowed to stand until the violent reaction was over.

To the resulting fluid, after concentration to a small bulk, 28 cc. concentrated sulphuric acid was added and the heat continued until charring resulted. The fat was not removed. The process was then continued by alternately adding nitric acid and charring by heat until the organic matter was practically destroyed. During the heating a part of the sulphuric acid was always decomposed, so that the product (free from nitric acid) varied in bulk from 10 cc. to 25 cc., depending in part upon the amount of solids present.

This product was diluted with an equal volume of water and the mixture again diluted with an amount of alcohol equal in volume to the sulphuric acid and water used. From this mixture, after standing several days, the lead was deposited as sulphate. The deposit was washed on a paper filter with 50 per cent. alcohol made acid with sulphuric acid, and was then extracted with 10 per cent. ammonium acetate solution. From this solution the lead was precipitated as sulphide, and in case much iron was present it was removed with very dilute hydrochloric acid. The lead was then converted into chloride by concentrated hydrochloric acid and removed from the filter by hot water. After evaporation the lead chloride was dissolved in a few drops of hot water, the solution filtered if necessary, and four final tests made, *i. e.*, potassium dichromate, potassium

iodide, sulphuric acid, and hydrogen sulphide. Lead was considered as present only when all four tests were obtained.

The paper is presented merely as a preliminary statement of the facts obtained thus far, and in no sense as conclusive evidence of the origin of azoturia. The wide distribution of lead makes proof by chemical means alone impossible, but the results obtained are certainly suggestive.

An attempt is to be made to produce the disease in normal horses by the administration of lead salts.

THE PATHOLOGY OF AZOTURIA.

(Preliminary Communication.)

W. R. BRINCKERHOFF, S.B. (From the Sears Laboratory of Pathology.)

The material upon which the following description is based was derived from eleven autopsies upon undoubted cases of azoturia, occurring in Boston between January 1 and May 1, 1900. The work was undertaken as supplementary to the chemical investigations of Dr. Balch, and is not intended to be a complete description of the pathology of the disease. The liver, spleen, kidney, and psoas muscle only were studied. For control, the organs from three normal horses, three cases of colic, and one of pneumonia were examined.

Gross Anatomy.—The organs were examined as soon after the death of the animal as possible, usually within six hours. The following points were observed:

Liver.—In the acute cases the liver, on section, showed nothing abnormal. When the disease had been of a longer duration the cut surface presented small pale yellow areas corresponding in distribution to the centres of the lobules.

Spleen.—In the spleens of two cases there could be felt firm lumps from 1 to 5 cm. in diameter, which on section of the organ were seen to be of a deeper red color than the rest of the spleen substance. These hæmorrhagic infarcts have been frequently observed in the spleen in azoturia. In the other cases examined nothing of note was seen in the fresh spleen.

Kidney.—The examination of the fresh kidney showed nothing but a marked congestion of the organ.

Psoas Muscle.—In all accounts of azoturia the psoas muscle is spoken of as exhibiting a marked degree of fatty degeneration. In every case examined this muscle on section was notably pale, and bits of it teased out in glacial acetic acid showed many fine and coarse fat drops, both free and within the muscle fibres. The same appearance was noted in a case of pneumonia.

Microscopic Anatomy—Technique.—All tissues were fixed in Zenker's fluid for twenty-four hours, washed in running water overnight, and hardened in 80 per cent. alcohol. The material was then cut into small pieces and passed through two changes of 95 per cent. alcohol, two changes of absolute alcohol, one of chloroform, and one of chloroform saturated with paraffin, remaining in each twenty-four hours. The tissue was then embedded in hard paraffin and cut. Sections from each organ were stained with Unna's methylene blue and eosine, Mallory's connective tissue stain, and alum hæmotoxylin.

Liver.—All the livers examined had certain characteristics in common. The capillaries in all were markedly injected. The liver cells contained fine brown granules, and the perivascular spaces were dilated, containing granular material taking the acid stain, presumably precipitated albumen of the serum. This pigment in the liver cells occurs in the livers of normal horses, but not to the extent seen in azoturia. Aside from these slight variations from the normal, two distinct types of lesion were found. In five cases the picture was one of a diffuse process, while in four the lesion was distinctly local in character.

In the first type the centres of the lobules seemed most affected. In the area around the central vein the liver cells were relatively small, distorted, and presented a greater or less degree of vacuolation.

In the second type, small areas, bearing no constant relation to the anatomical structures of the organ, were to be seen, in which the liver cells had more or less completely disappeared, the space left being filled with dilated capillaries. Around such areas the nuclei of the liver cells frequently did not stain, the

protoplasm being vacuolated and often invaded with leucocytes.

The focal and diffuse lesions were not found associated in any of the cases examined.

Spleen.—The spleen presented no constant lesion. In seven of the nine examined histologically there was a large amount of brown pigment, in the form of spherules from one-half to one μ. in diameter, enclosed within cells in the pulp. Two spleens showed in the centre of the lymph follicles a circumscribed area, composed of epithelioid cells, many of which contained in their protoplasm nuclear fragments. The appearance simulated closely that seen in diphtheria.

Kidney.—The kidneys exhibited the most constant lesions of any of the organs examined. In every case there was acute parenchymatous degeneration, shown by a more or less extensive degeneration of the convoluted and the collecting tubules. Casts were occasionally found. In six of the ten cases in which the kidney was examined microscopically, there was evidence of a chronic interstitial process, consisting in small areas in round cell infiltration, containing atrophied tubules (one case), or in the formation of interstitial tissue around the glomeruli, with occasional bands of connective tissue surrounding atrophied tubules and glomeruli. There was, in several cases, a diffuse increase in the interstitial tissue of the pyramids. In one kidney almost every glomerule was surrounded by more or less connective tissue.

Psoas Muscle.—As a matter of routine the psoas muscle was examined histologically in every case. In seven out of ten there was a more or less extensive degeneration of the muscle fibres. The change was selective, attacking some fibres and leaving wide areas of normal structure intact. The affected fibres were unevenly swollen, and contained hyaline areas which were irregularly eroded and often invaded by leucocytes. In a single muscle fibre degenerated portions were seen alternating with apparently normal muscle structure. A dissolution of parts of some fibres had taken place, and the sarcolemma could be traced from one hyaline mass to another, the intervening

space containing only a small amount of granular detritus. In some cases there was evidence of repair shown by the presence of young connective tissue cells around the necrotic fibres. In the psoas of the one case of pneumonia examined the same appearance of degeneration was seen, and was there rather more intense than that observed in any of the azoturia series.

Summary.—In the eleven cases of azoturia examined changes were found in the liver, spleen, kidney, and psoas muscle. The lesions were :

Fatty degeneration of the liver. (Five cases.)

Focal necrosis in the liver. (Four cases.)

Proliferation of the epithelioid cells in the lymph follicles of the spleen. (Three cases.)

Hæmorrhagic infarcts in the spleen. (Two cases.)

Pigmentation of the spleen. (Seven cases.)

Parenchymatous degeneration of the psoas muscle. (Nine cases.)

Acute parenchymatous degeneration of the kidney. (Ten cases.)

Chronic interstitial nephritis. (Eight cases.)

Conclusions.—(1) The acute degenerations of the liver and kidney, the proliferation of epithelioid cells in lymph follicles of the spleen, and the focal necroses in the liver are similar to lesions found in man during various of the acute infectious diseases. In the case of the human being such changes are generally regarded as manifestations of a toxæmia.

(2) The pigmentation of the spleen indicates nothing more than a destruction of blood corpuscles, and is common to a number of diseases in both man and animals.

(3) The degeneration of the psoas muscle is quite analogous to the Zenker's degeneration seen in typhoid fever.

(4) The chronic interstitial nephritis would indicate either that some toxic substance had acted for a considerable time, or that there had been previous attacks of an acute nature.

We have, then, the picture of a pathological process combining chronic and acute factors. This condition seems most

reasonably explained by postulating the presence in the organism of a toxic substance, preferably one capable of causing both acute and chronic changes.

In this study of the lesions found in azoturia, pathological changes have been found which merit further study, and it is my intention at some later date to carry out this investigation in more detail. Experiments upon animals have been begun, but the material at hand from that source is not sufficient to be reported at present, and is also reserved for later publication.

The table formulated by Dr. Balch gives the result of the chemical examinations made by him, the heavier lines showing those cases in which the larger amount of lead was found.

The treatment that has been so favorable in these cases of late, the iodide of potass. is not a digression from the object of this paper, but in my opinion helps to sustain the theory of Antiseptic Therapeutics.

Works referred to: Finlay Dun's "Veterinary Medicines." *Veterinary Record. Medical Record.* AMERICAN VETERINARY REVIEW. "Pathogenic Bacteria," McFarland. "Practical Therapeutics," Hair.

CONTAGIOUS CONJUNCTIVITIS IN CATTLE.

BY WM. PETRIE, V. S., WHEELING, W. VA.

A new disease. (?) We hear of new diseases occasionally, but usually on investigation find it to be some well known disease that may not be common in the section from which the report comes. In this case I believe we have a new disease. My experience with it has been limited. Others may be familiar with it, but so far I have seen very little printed about it. I will report my knowledge of it that it may be discussed and that others may not be entirely off their guard when they see the first case.

After seeing my first case I wrote Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, who kindly informed me that the disease had been known about two years, and also gave a

treatment for it. He did not name it, but I saw a few lines in a Western paper that gave it the name I have used here.

Definition.—The name itself carries its full meaning. It is inflammation of the conjunctiva of the eye, and is contagious.

Causes.—The disease is surely due to some form of infection, for when it is once introduced into a herd it spreads until all or nearly all are affected.

The danger of infection is not so great; other cattle may cross and recross the path of those affected and not contract the disease, but of those that belong to the herd very few escape.

The disease seems also to originate spontaneously, as it appears in sections where it has never been known to exist and without any visible means of its being transmitted from any infected district. It is slow in spreading and may take several months to complete the rounds of a herd of twenty-five or more.

Symptoms.—The first symptoms are sensitiveness to the light, with a copious flow of tears, followed by the conjunctiva becoming thickened, white and opaque. The whole eyeball seems to swell until the lids cannot be closed. As the inflammation subsides the opacity of the conjunctiva disappears first from the edges, the white spot becoming smaller until it disappears entirely, or when it is reduced to the size of a dime it sometimes becomes very vascular and looks like a large red wart on the centre of the eye. This in time will also disappear and the animal be as good as ever except for the loss of flesh, and if it be a milch cow a great reduction in the flow of milk also.

Treatment.—My first treatment was to bathe the eyes in warm water and apply direct to the eyeball a weak solution of boracic acid and atropine, which did very little good.

Following the advice of Dr. Salmon, I next used a solution of boracic acid to bathe the eyes and face, and then placed in the eyes a small amount of iodoform-vaseline ($\frac{1}{12}$ well mixed); this gave very marked relief. After that, in place of the iodoform-vaseline ointment, I substituted an ointment made of europhen and vaseline ($\frac{1}{25}$ warmed and mixed), and obtained still better results.

Right here let me say that I find europhen a much better antiseptic than iodoform, as it goes farther and has greater medicinal powers. The ointment should be placed inside the eyelid, and then by rubbing the lids together the ointment is spread over the whole eyeball. Two or three dressings as described above will be sufficient, except in the cases where the vascular fungus appears.

In two cases where the fungus appeared I used a 5 per cent. solution of protargol, applied with a camel's hair brush, and one application was sufficient. Since then I have had no opportunity to try the protargol on a case of this kind, but from its prompt action in these cases I feel sure that it is the remedy to use.

During the past summer this affection of the eyes of cattle appeared in several places in our State, but no new cases have been reported since the cooler weather set in.

One man reported recently that his herd of fifty steers were all right again without the loss of an eye.

VETERINARY TOPICS OF TO-DAY.

By W. J. Martin, M. D. C., Kankakee, Ill.

President's Address before the Illinois State Veterinary Medical Association, Nov. 15, 1900.

Gentlemen:

It is with pleasure that I again welcome you to this our annual convention. It is also a pleasure to report to you that during the past year the conditions surrounding the practice of veterinary medicine and surgery have materially improved. The market prices of all kinds of live stock have increased in value and in numbers; more especially is this true of horses. The visions of the dreamers who saw in the near future the displacement of the horse by mechanical contrivances, have been rudely dispelled, and to-day the horse holds a higher place in the estimation of the nations of the world than ever before in its history. In military operations, it has been found that rapid

movements of armies cannot be accomplished without the aid of the horse. With the object of strengthening their transport and cavalry service, the nations of the world at the present time are straining every nerve to acquire large numbers of suitable horses for this purpose. So enormous has this demand been during the past two years, that the price of horses has fully doubled in value.

In the field of veterinary literature during the past year there have appeared several valuable books and monographs, some of these being of much value to the busy practitioner. Among the more valuable of these may be mentioned the "Fifteenth Annual Report of the Bureau of Animal Industry." This volume is replete with a vast amount of information, and should find a place on the book-shelf of every veterinarian. An excellent monograph on the diseases of poultry, from the versatile pen of Dr. D. E. Salmon, contains a fund of information upon a hitherto neglected branch of our science. The second part of Vol. I. of that excellent work, entitled "A Treatise on Surgical Therapeutics of Domestic Animals," by Profs. Cadiot and Almay, translated by Prof. A. Liautard, has lately been issued. It is filled with a vast amount of the latest information on the best methods of performing the routine surgical manipulations met with in practice. A work just off the press is a small brochure entitled "A Course in Surgical Operations." It is translated from the German of Dr. Pfeiffer by Dr. W. L. Williams. While many of the operations recommended in this work are a decided innovation in American veterinary surgery, the value of several, from a practical point of view, may be questioned. There is a vast amount of difference in point of utility and also from a financial standpoint in performing an experimental operation upon a worthless animal in the surgical clinic of a veterinary school, and that performed upon a valuable animal in private practice. In the former, if failure marks the operation, no harm is done; whereas in the latter, failure often means long and expensive litigation, and perhaps the ruin of a bright professional career besides. It might be worth while, therefore, that

the practicing veterinarian exercise caution in performing new or untried surgical operations upon valuable subjects.

While upon the subject of surgical operations, I wish to call your attention to the gratifying results to be attained in treating surgical wounds of the lower animals antiseptically. An erroneous idea appears to exist among a large number of veterinarians that it is an utter impossibility to perform aseptic operations in veterinary surgical practice. I wish to say that a faithful attempt to carry out surgical asepsis in veterinary practice will be rewarded with the most gratifying results. The day of "laudable pus" in veterinary operations (at least in the majority of them) is a thing of the past; for we know beyond the shadow of a doubt that the formation of pus is a physical impossibility without the presence of pus-forming bacteria.

A subject to which I wish to call your attention is the treatment of equine tetanus by the hypodermic injections of carbolic acid. This method has been employed to a limited extent in cases of acute tetanus in human practice, and with the most excellent results. It has also been somewhat extensively used in England by a few veterinarians, who have reported good results with it. I have, during the past summer, used it to a limited extent, and am satisfied that in cases of acute tetanus, if it is given early and in large doses, it is superior to any other drug in our materia medica for the treatment of this most fatal disease. Carbolic acid does beyond a doubt act as an antitoxin to the ptomaine intoxication of the blood in cases of tetanus. But to accomplish this result it must be administered early in the initial stage of the disease and also in very large doses. The formula used by me in administering carbolic acid in cases of tetanus is as follows: Carbolic acid, 95 per cent., 1 ounce; boiled or distilled water, 4 drachms; glycerine, 4 drachms. Mix. Sig. 2 drachms of this mixture is injected into the neck every 2 hours for the first 24 hours to 48 hours, and about every 4 hours afterwards. The effects of these injections after the first 24 hours are most favorable; the spasmodic contractions of the muscles of the neck are lessened in force and intensity, the

pain and anxiety of the countenance disappear to a certain extent, and the patient appears to experience much relief and comfort. At the seat of each injection a swelling occurs, but this gradually subsides in the course of a few days. Loss of hair does not as a rule occur, unless the injection is made very superficial under the skin, and even then the loss is rarely permanent. It is best to insert the needle somewhat deeply into the tissues. The injections appear to me to have a slightly constipating effect on the bowels, though whether this was increased much more than is usual in cases of tetanus I am unable to say. However, in using hypodermic injections of carbolic acid in the treatment of tetanus we should supplement it with other appropriate therapeutic measures, such as placing the animal in slings, dark and quiet corners, sloppy diet, rectal enemas, etc.

The latest innovation in human surgery is spinal anæsthesia with cocaine, for the painless performance of surgical operations upon the inferior part of the body. This operation, which is attracting so much attention at the present time among surgeons, was first discovered or used by Dr. J. L. Corning, of New York, in 1885. Dr. Corning first experimented upon dogs, and afterwards upon human subjects. The operation, which is not without danger, is performed as follows: The patient being placed in a slightly bent position, a hollow needle is inserted between the fourth and fifth lumbar vertebræ, and passed downward untfl the neural canal is entered; this is known by a few drops of spinal fluid being discharged through the needle; the syringe containing from 10 to 15 minims of a two per cent. solution of cocaine is then attached and the solution slowly injected. Anæsthesia usually occurs in from ten to fifteen minutes. In veterinary practice the operation could be successfully used on dogs and other small pet animals.

In performing surgical operations, even of the most trivial nature, it should be our object to perform them with the least amount of pain to the suffering animal possible. This can be readily done in minor operations by the injection of cocaine or eucaine hypodermically, and in the more major operations by

chloroform anæsthesia. We should, as veterinarians, ever bear in mind that time-honored adage, "A merciful man is merciful to his beast."

A remarkable verification of the theory that malarial fever was propagated by the bite of certain species of mosquitoes has lately come to light. The experimenters, Drs. Sanborn and Low, have, during the past summer months, lived in one of the most malarious districts of the Roman Campagna without contracting malaria. The only precautions taken by these men and their servants to escape the disease was the spending of the nights in specially constructed houses so entirely protected by netting as to entirely exclude the night-flying anophles, or malaria-propagating mosquito. It has been demonstrated by Ross that the mosquitoes are not of themselves the sole cause of malaria, but simply act as hosts to the rod-like bacilli which are found in the blood of those suffering from malaria. This discovery of the etiology of malarial fever will no doubt be the means of laying bare the secrets surrounding the origin or etiology of many of the miasmatic fevers, such as South African horse sickness, rinderpest in cattle, and yellow fever in man, diseases which at the present time render many of the most productive regions of the globe uninhabitable to mankind.

I wish to thank the members of this association who have so kindly assisted me in discharging the duties of president of this society during the past two years, and I wish also to assure them that I shall always look back upon the same with the most grateful feelings.

AT THE CHRISTMAS EXAMINATIONS of the Ontario Veterinary College the board of examiners awarded diplomas to the following gentlemen: Robert K. Bryant, Sunderland; Herbert Killips, Tonawanda, N. Y.; Z. T. McNees, Butler, Pa.; Orange Judd Phillips, Warrensburg, Mo.; W. J. R. Ramage, Mooresburg; Ira B. Rivenburgh, Chatham, N. Y.; Herbert L. Switzer, Springfield, Mass. Primary examinations anatomy—Norman A. Anderson, passed primary in anatomy; Thomas H. Monahan, passed primary in anatomy.

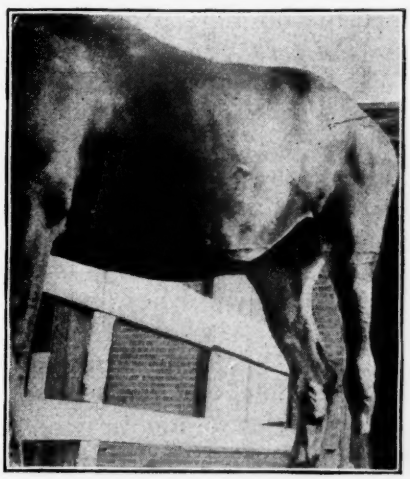
REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

LACTATION IN A VIRGIN MULE.

By ROBERT W. ELLIS, D. V. S., New York City.

Upon visiting the stables of one of the sub-contractors of the underground road of New York City, which contained a very large number of young mules just shipped up from a Kentucky mule-breeder's farm, my attention was called to a mule whose mammary glands were distended with milk, and a remedy to check it requested. I immediately became interested, and examined the mule carefully to try and discover whether she was pregnant, had given birth recently, or was at her period of œstrum, but could find nothing that would lead me to believe either or any of such conditions existed. She had been milked



that morning at six o'clock, but at my request a young Cuban who was taking care of the mules readily milked me a quart bottleful, it then being about the middle of the forenoon. This milk I took to a chemist to test for me in regard to its composition, as I thought of reporting the case, and supposed it would be interesting to have such a report accompany it; but the chemist allowed the sample to perish before he got around to it, so no test was made. I did not administer any medicine to

check the flow of milk, but kept the case under observation for several months, often seeing her milked by the Cuban, as per photograph, and she would freely milk four quarts at a milking of good rich-looking milk, of which my dog often drank while warm and foaming; but I never sampled it myself. Her abdomen never changed in volume as time went on, and she eventually proved herself *not in foal*, nor do I believe she ever had been. I believe her to be a virgin mule. As such, the case is interesting; if I am wrong, and she has had a foal, it is by no means any less interesting in the case of a mule. In addition to the photo showing the mule being milked, I send one in which I endeavored to show the mammary glands filled with milk, but despite my requests for the Cuban boy to defer milking her until I could take a photograph of her in the forenoon, he invariably forgot, and milked her as usual; so getting tired of taking my camera there with me, I finally took the enclosed photo one morning after she had been milked, and if the cut reproduces those black glands, situated as they are in the shadow formed by the sides of the region in which they are located (which is somewhat doubtful), you will be able to see to what extent they are developed even when not distended by the presence of milk in this hybrid animal.

INVERSION OF UTERUS IN A MARE—RECOVERY.

By R. J. MICHENER, V. S., Lebanon, Ohio.

I was called at 2 A. M. May 2, 1900, to see a mare in the country, eleven miles distant. On arriving, found her lying down in the corner of a grass field, unable to rise on account of

the weight of the protruding uterus, which was completely inverted.

History as follows: Mare had foaled one week previous without assistance or trouble. Had been doing well until the evening previous, when owner thought she had the colic, and turned her out to roll, but it soon proved to be something else.

I gave morphia sulph., gr. x, hypodermically, and proceeded to cleanse the uterus with warm water and placed it on clean sacking. I now secured her front feet so she could not rise; then with two assistants, one at the head and the other to help me, we proceeded to return the protruding organ, but the severe straining of the patient prevented, so I gave another injection of morphia, gr. viii, and waited a few minutes, when we made another unsuccessful attempt. The morphia had but little effect in preventing straining, so I placed a strong surcingle around the mare's body just in front of the hips and drew it tight, which prevented severe straining, and then we replaced the uterus without further trouble. I kept my arm in the womb a short time, then allowed the mare to rise and walk to the stable, and made a floor of long planks, with the rear ends raised so as to cause her to stand with hind parts higher. She went to eating with a good relish. I prescribed aconite and fluid extract cannabis indica, to be given every two hours, and advised very light diet. The morphia caused dilatation of the pupil and full pulse, which I think was a benefit in the way of preventing straining after the return of the organ. I left with directions to loosen the surcingle as circumstances would permit. She made a rapid recovery and the foal suffered but little, as we let it run with her right along.

Dystokia, with Sequelæ to Mother and Calf.

Before leaving, however, a neighbor of my client called, requesting me to go with him to see a cow which showed signs of labor the evening before, but had made little if any progress. I did so and found a fine Jersey cow standing quietly in the stable. On examining her vagina found front feet of fœtus protruding, the head caught on the cow's pelvis. That was easily straightened, but labor pains had ceased, and did not return on manipulation. I now gave hypodermic injection of ext. ergot ʒ i; waited a few minutes and inserted my hand in vagina again, when labor was resumed, and with some assistance she was soon delivered of a fine large calf. I soon perceived the cow paid no attention to her offspring, so we rubbed it off nicely. I left, advising owner to give calf necessary as-

sistance. I heard nothing more from my patient for a few days, when I was told the cow was recovering from an attack of parturient apoplexy, and the calf died from the effects of the scours.

PULMONARY EMPHYSEMA IN A COW.

By C. H. SWEETAPPLE, V. S., Ontario Veterinary College, Toronto, Canada.

Among the numerous post-mortem examinations that I am accustomed to make on cattle for butchering purposes in the city of Toronto, Canada, for the Health Department of the city, the following case may be of interest to your readers, as so marked a case of "pulmonary emphysema" in the ox tribe, and the animal otherwise in perfect health, is probably seldom met with.

A short time ago I was called to the Toronto cattle market to examine a fat cow. Her respirations were very frequent, but *not abdominal;* temperature 102° F.; pulse normal; healthy moisture on the nose; auscultation revealed no mucous râles in the trachea or bronchi; in fact, no abnormal sounds whatever that I could discover. On percussion of the thorax, I fancied that the right side was a little more resonant than the left. But there are certainly better places for auscultation and percussion than a crowded cattle market. There were no febrile symptoms whatever.

The cow was ordered to be retained for a few days and then to be butchered under inspection, as it was probable that by rest and quietude for a short time her respirations might improve. Four days afterwards I again examined her at the slaughter-house. I found no change in the respirations; they were quite as frequent as before, and all the other physical signs of health as before. I was told that the appetite and rumination, as well as the evacuations from the bowels and kidneys, were normal.

The animal was then butchered in the ordinary way, the viscera removed, and all carefully examined.

There were no adhesions, abnormalities nor pathological changes of any kind that I could discover, with the exception that the greater part of the large lobe of the right lung was greatly distended with air ("interlobular emphysema"). The distension being much greater than the same condition in the horse, owing to the well known fact of the much greater amount of areolar tissue in the lungs of the ruminant. The carcass was well nourished and fat.

The only history I could learn of the case was, that the farmer had said that the animal's breathing had been as described "ever since several months ago, when she had been chased out of a field of standing corn by his dog; her stomach was fully distended with green food at the time, and she had been pretty well chased."

FORLORN CASE OF PARTURIENT PARESIS—EXCESSIVE MEDICATION—RECOVERY.

By D. D. KEELER, V. S., Salem, Oregon.

Saturday, September 29, a man living in the north end of Salem came in a great hurry for me, stating that his cow had had a calf on the 27th out at his brother-in-law's, on the south end of Howell Prairie, about ten miles from Salem. After asking him a few questions I thought probably his cow was down with paresis, and on arriving I found my suppositions well founded. Found her down out in a wood pasture, lying on side, moaning, breath very short, pulse very weak, numbering sixty, temperature 105; would not pay any attention to her calf.

On trial found she could not swallow. Immediately proceeded to give her Schmidt's treatment (200 grains iodide of potassium) and then placed her on the sternum. Kept her there by putting around her bales of hay. I also gave her eserine-pilocarpine, gr. iv, hypodermically. I commenced this treatment about 3 P. M. and found at 5 P. M. that she could swallow; the eserine-pilocarpine disturbed the bowels considerably and started up borborigmus, but did not cause any passage therefrom; I now gave by mouth one and one-half pounds sulphate magnesia, four drachms aloes, two drachms powd. nux vomica, 10 minims croton oil and one drachm powd. ginger, in three quarts warm water; gave it very slowly, allowing plenty of time for her to swallow; gave some directions about caring for her and left some stimulants and supportive treatment, and returned to the city.

Returned quite early Sabbath morning; found her about as I had left her the evening before, the bowels seeming to trouble her some. Immediately gave her again 180 grains iodide potassium, according to Schmidt's treatment; also gave her a good large injection of water with one ounce fluid extract belladonna in the water per rectum. She soon passed quite a large stool and immediately began to come to herself, and by 5 P. M. was on her feet, though rather wobbly. I had her given a few doses each day of a stimulating tonic and she made a complete re-

covery. I have described this case more minutely because it was the first case that I was successful in where the power of deglutition had passed before I could commence the treatment, and by these hope to encourage to a more persistent effort some one of my fellow practitioners.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D.V.S., New York City.

TEST INOCULATIONS AGAINST TEXAS FEVER [*Report of the Commission of the Soc. Centrale de Méd. Vet.*].—In the November number of the REVIEW I gave a brief account of the investigations of Lignière in Argentina, in regard to the dreadful malady "Tristeza," or, as it is called here "Texas fever." In the same article I mentioned the appointment of a commission, consisting of Messrs. Mollereau, Moussu, Nocard and Railliet, to investigate the immunizing effects of the inoculations discovered by Lignière. The report is as follows: "The test inoculations were undertaken in the presence of the members of the commission, and for the occasion five cattle were employed. Two cows (No. I and No. IV) were inoculated by Lignière, after his arrival from Argentina, with the natural disease. Both animals became affected in a mild way, so that they could be taken as immunized. Two cows (No. II and No. III) were submitted, July 5, to the inoculation as recommended by Lignière, the effect of which was only a slight hyperthermia. The fifth animal (fully developed) was only to serve as control animal and was not subjected to any treatment. On July 15 the five animals received subcutaneously injected 5 cc. each of virulent blood. The two cows, No. I and No. IV, which recovered from the slight attack of the disease, did not show disturbances of any kind, the appetite remained good and the temperature normal; the injection therefore had no effect on either animal. The other two cows, No. II and No. III, behaved in the same manner as No. I and No. IV, the temperature always being normal, thereby showing the preventive inoculations to be an excellent success, as the test animals did not show the slightest disturbances. In the remaining animal, No. V, nothing was noticed the first five days, the temperature fluctuated regularly between 38 and 39°C., the appetite being

good. During the night between the 5th and 6th day, there was a change noticeable, the temperature raised from 38.4°C to 40°C, the appetite almost entirely ceased, but in spite of this strong reaction, the animal remained strong and lively, the urine being of the normal color. On July 22 the temperature raised to 40.7°C, the animal refused to partake of any food, and was dull, the urine slightly colored, but the blood contained only a few hæmatozoons. On the 23d the temperature raised to 41.2°C, the animal extremely depressed, absolutely refusing all food. The urine was red and became brown on exposure to air; the examination of the blood proved the presence of numerous piriform hæmatozoons. The counting of the red blood corpuscles, which was undertaken by Nocard, proved at 2 P. M. 3,200,000, being only about half of the normal number. At 6 P.M. there were only 1,100,000. Concluding from other test animals which manifested the same symptoms as this, it was thought by the members of the commission that the animal would die the same night. Unexpectedly the condition remained the same on the 24th. The animal still refusing food, was constipated, the muzzle was very dry, the urine darker than the day before, and only 370,000 red blood corpuscles were found in a cubic millimeter of blood. The blood contained less parasites, they were not piriform, but more rounded, while the temperature dropped almost 3°C., from 41.2°C. to 38.3°C. On July 25 the animal was considerably better, the temperature being 38.4°C., the muzzle was fresh, the animal drank, and searched for food. The animal seemed to be on the road to recovery. As the natural disease which causes immense losses in Argentina and also in the United States, does not in every case terminate fatally, the recovery of the test animal should not be surprising. But the greatest importance is, that the experiments proved without doubt the absolute effect of the inoculation discovered by Lignière. The two inoculated animals were not in the slightest degree affected, while the control animal suffered from a severe attack, so much so that a fatal termination was expected. In a practical way these experiments were very satisfactory. Now, we are anxious to see Mr. Lignière's publications in regard to the procedures of the inoculations, and, furthermore, the preparation of the immunizing serum and how long the inoculated animals remain immune.

THE USE OF MALLEIN IN THE DIAGNOSIS OF GLANDERS [*Dr. Borella Alete*].—During the autopsy of a horse which died from colic, lesions on various parts were noticed, similar to the

pathological product of glanders. The diseased parts of the organs were sent to Prof. Piana, who confirmed the diagnosis of glanders. Consequently 9 suspicious cases from the same stable were condemned. The author decided to try the mallein test on these cases, and the results of his experiments are as follows:

Horse. No.	Average temp. of the last two days previous to injection.	Highest temp. 20 hours after injection.	Difference between the two temp.
I.	37.1	38.4	1.3
II.	38.5	39.1	0.6
III.	37.1	38.9	1.8
IV.	37.6	39.0	1.4
V.	37.6	39.2	1.6
VI.	37.4	40.0	2.6
VII.	37.3	39.3	2.0
VIII.	37.5	39.8	2.3
IX.	37.1	38.5	1.4

As the result of this, the author declared horses No. VI, VII and VIII to be affected with glanders, No. III and V as very suspicious, No. I, IV and IX as suspicious, and the horse No. II not suspicious. All the horses were destroyed at the slaughter-house of Mantua, and it was found that the horse No. VII had glandular nodules in the lung (lung glanders), while none of the other horses showed the slightest sign of the disease. This is another instance where it is proved that we cannot rely upon mallein as a certainty in the diagnosis of glanders.—(*Clinica Vet.*)

THROMBOSIS OF THE HUMERAL ARTERY [*Wollman*].—A nine-year-old horse showing no peculiarities while standing or walking, when trotted for about 15 minutes showed a lameness on the off fore leg, which gradually became so bad that the animal was unable to lift the leg, and dragged it with the toe on the ground; the lameness, indeed, was so pronounced that the horse threatened at any time to break down. The entire body was covered with perspiration, with the exception of the right shoulder down to the forearm, which was dry. The respiration was very much accelerated. The extensors of the forearm showed a peculiar trembling motion. The pulsation of the plantar artery was very weak. After ten minutes rest all these symptoms would disappear, leaving only a slight weakness. As this condition always came on in the same manner a diagnosis of "thrombosis of the humeral artery" was made. The owner requesting treatment, slight exercise was given twice a day to the

horse, and iodide of potassium was prescribed in the drinking water. Fourteen days after beginning this treatment the horse became blind in both eyes. Examination proved the contents of the eyes to be of a normal character; no signs of inflammation were present. At the same time, the disturbance in locomotion got to be so bad that the animal could hardly walk to the place to be destroyed. When an autopsy was performed, a thrombus 17 cm. long was found in the right humeral artery, which reached into the brachial artery. The cause of the sudden blindness could not be explained.—(*Ztschr. f. Vet.*)

OBITUARY.

DEATH OF PRINCIPAL WILLIAMS.

The profession of veterinary medicine sustained the loss of a distinguished member on November 12, when William Williams, Principal of the New Veterinary College, Edinburgh, succumbed to heart failure, having suffered from bronchitis for some time, though there were no fears of his early demise. To English speaking veterinarians throughout the world his was a most familiar name, rendered so principally through his two volumes: "The Theory and Practice of Veterinary Medicine" and "The Theory and Practice of Veterinary Surgery," they having been accepted as standard text-books in all colleges of veterinary medicine where the language is spoken. His fame was added to through his editorship of the *Veterinary Journal*, to which he succeeded upon the retirement of George Fleming. First associated with the Dick Veterinary College he became involved in a serious controversy with the trustees, which resulted in his withdrawal and the establishing of the school in Leith Walk, in 1872, which has been presided over by him ever since. He was born in 1832, in Wales, graduated from the Dick College about 1858, winning the gold medal of the Highland Society in competition with Principal McCall, of the Glasgow Veterinary College; Principal Law, of the New York State Veterinary College, and Mr. Field, of London. He was an honorary member of almost every veterinary association in Great Britain, and held many other posts of honor, having been a councilman of the city of Edinburgh for eight years. His son, W. Owens Williams, who has been his father's partner for a number of years has succeeded to Principalship of the New College, and as editor of the *Veterinary Journal.*

DEPARTMENT OF SURGERY.

By L. A. and E. Merillat,
of the McKillip Veterinary College, Chicago, Ill.

CASTRATION OF CRYPTORCHIDS.

Cryptorchid is a term applied to mammalia that have one or both testicles hidden or concealed in some of the anatomical structures through which they pass on their descent to the scrotum. During early fœtal life the testicle floats around in the abdominal cavity, suspended from the sublumbar region by a fold of peritoneum and attached to the scrotum by a long cord (*gubernaculum testes*), which guides it on its descent through the inguinal canal into the scrotum. In most mammalia it descends during intra-uterine life, but in some instances it may remain in the inguinal canal for some time after birth. In solipeds it is not an uncommon thing to find this condition (*pseudo-cryptorchidism*) exist for a period of six months or a year after birth. The true cause which retards or arrests the testicle on its way to the scrotum has never been satisfactorily explained, and is a subject that does not come within the domain of surgery, but one that can be considered in embryology or teratology; the location of the testicle, however, is of more importance, because it gives rise to an important classification of cryptorchidism. The terms which are applied to the condition are enorchid, anorchid, cryptorchid and ridgling, the last being the one used by the layman. The origin of the word "ridgling" is uncertain, but may be considered as a modification of the word "*ridgel*," which is of Scottish origin. Anorchid is a term that has been improperly applied to the condition; considering it etymologically it should be applied only to animals that have had one or both testicles removed. Enorchid is more applicable to the condition than either of the above mentioned terms; cryptorchid is the one most generally used by the profession in referring to the condition.

The classification of cryptorchids varies according to the object in view, they may be grouped according to the location, development and condition of the testicle. For our purpose we shall use the classification by which the location of the testicle is designated. Farmer Miles has numbered them from one to five; the first three refer to the location, and the remaining two refer to pathological conditions of the testicle. The following classification of the cryptorchids is the one that we will use:

1. Intra-abdominal.
2. Extra-abdominal.
(*a*) Supra-inguinal.
(*b*) Inter-inguinal.
(*c*) Supra-scrotal.

1. *Intra-abdominal Cryptorchids* are those that have one or both testicles in the abdominal cavity.

2. *Extra-abdominal Cryptorchids* are those that have one or both testicles in the inguinal canal, somewhere between the internal and external inguinal rings. The inguinal canal being from 15 cm. to 20 cm. in length, gives rise to a number of secondary classifications. Some are located near the internal inguinal ring (*supra-inguinal*) and sometimes only partly in the ring; others are in the canal between the rings (*inter-inguinal*); and occasionally some are classed as cryptorchids that have the testicle in the external inguinal ring (*supra-scrotal*) and above the scrotum.

Each of the above cryptorchids can be classed according to their development of the testicle.

1. Orchidauxe.
2. Orchidion.
3. Orchidatonia.

1. *Orchidauxe* is a condition frequently observed in intra-abdominal cryptorchids, which generally results from diseases, such as tumors, cysts or œdema.

2. *Orchidion* is a small atrophied testicle. This condition of the testicle is usually found when it is located in the inguinal canal.

3. *Orchidatonia.*—This condition is marked by a loss of tonicity of the testicle which may result from œdema, cysts or any degeneration of the body of the glands; and is frequently observed in cryptorchids.

Classification of pathological lesions common to cryptorchids:

1. Orchidospongeoma.
2. Orchidoncus.
3. Varicocele.
4. Œdema.
5. Hydrocele.
6. Cysts.

1. *Orchidospongeoma* is a tubercular tumefaction of the testicle, a condition not common in lower animals, but one that might be found in the bovine and porcine species. We have

noticed a condition in a cryptorchid hog that had the appearance of being tubercular, but the inspection was not carefully made and could not verify that our conclusion was correct.

2. *Orchidoncus.*—Tumors located in the testicle may be carcinomatous or sarcomatous, and to distinguish between them is generally impossible without a microscopic examination. Fibroma are sometimes found in intra-abdominal testes.

3. *Varicocele.*—This is a condition frequently found in cryptorchids, but is not confined to this class of males.

4. *Œdema* is a condition that is often found in intra-abdominal testicles. When in this condition they are generally enlarged and add much to the difficulty in removing them through the inguinal canal.

5. *Hydrocele* is a condition that occurs occasionally in extra-abdominal cryptorchids, and generally causes no inconvenience in castration.

6. *Cysts* are frequently found involving the whole or part of the testicle. When located in the body of the testicle it may replace the greater part of the parenchyma. Some of them are filled with a clear fluid, while others contain a gelatinous connective tissue. This condition is generally found in intra-abdominal cryptorchids and greatly interferes with castration.

Surgical Anatomy of the Inguinal Region of Solipeds.—The inguinal canal includes the space on each side of a raphé extending from the perineum to the umbilical region; superficially it presents the scrotum and sheath; the prepubian tendon, which is from 8 to 10 cm. wide, extends forward from the brim of the pubis, and forms the internal boundary of the external inguinal ring; an aponeurotic portion of the tendon extending to the femoral fascia forms the antero-external boundary of the ring; and Poupart's ligament forms the posterior boundary. The external inguinal rings, which are on each side of the median line, can easily be located by manipulation. The inguinal canal extends upward and outward from the external inguinal ring, along the anterior face of Poupart's ligament, to the internal inguinal ring. The length of the canal varies from 15 to 25 cm. In a small horse it is about 15 cm. long; in a medium sized horse, about 20; and in a large one it is about 25 cm. The arteries to be avoided are the external pudic, and the subcutaneous abdominal, which is a branch of the external pudic and is located along the sheath.

Preparatory Treatment.—To properly prepare the patient for the operation the alimentary canal should be emptied by the

administration of a cathartic; he should receive no food during the last 24 hours, and no water during the last 12 hours prior to the operation.

Restraints.—To carefully cast and properly secure the patient it is necessary to have good assistants. The operator should have a good practical casting apparatus, and a good twitch, and see that the animal has a good halter. A good, clean and suitable place must be prepared under the direction of the operator. The success of the operation will depend much upon the restraint applied after the patient is cast. The hind legs should be flexed upon the hock and spread as much as possible, and when convenient the posterior part of the body should be elevated, which will reduce the pressure of the viscera in the pelvic cavity.

Operation.—Each step should be made with every aseptic precaution possible; the instruments should be sterilized and kept in a receptacle, immersed in an antiseptic solution (strong);

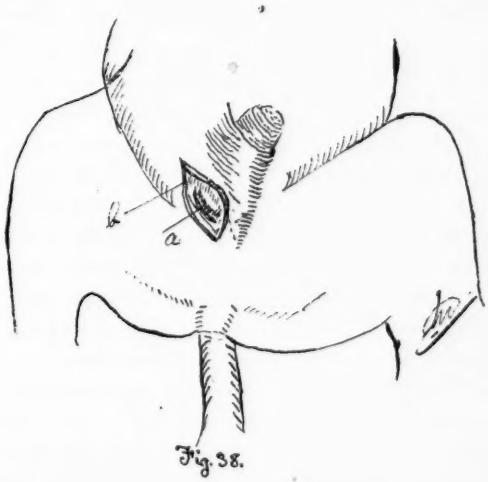


Fig. 38.

a, External inguinal ring; *b*, incision.

the operator's hands should be thoroughly cleaned, and before inserting them into the canal they should be washed or covered with some aseptic lubricant.

Before beginning the operation the animal should be given a general anæsthetic; if this cannot be done, a large dose of chloral hydrate should be administered at least one-half hour before the operation; and, when these preliminary steps have

been taken, the patient should be placed in the most convenient position, and an incision made through the skin and subcutaneous tissue, along the transverse axis of the external inguinal ring (Fig. 38.) The incision should be about 10 cm. long, avoiding the external pudic artery and the subcutaneous abdominal artery and vein.

The external ring is opened by breaking through the connective tissue; if the testicle is on the right side use the right hand (on the left side use the left hand), and insert it

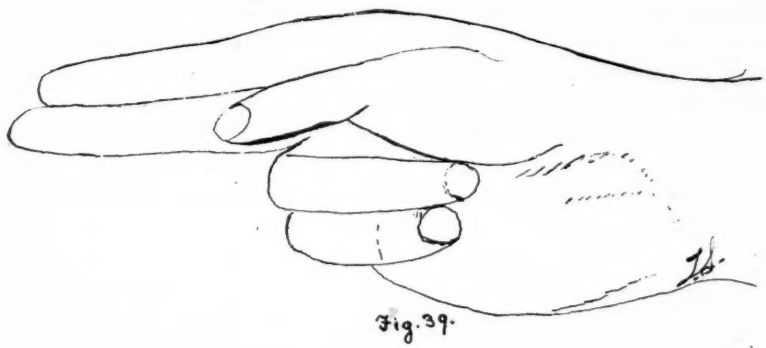


Fig. 39.

into the external ring with the first two fingers extended (Fig. 39), and with gentle pressure rotate it, occasionally spread them (the fingers) apart like a glove stretcher, keeping close to Poupart's ligament and in the subcutaneous tissue, until you reach the commissure formed by Poupart's ligament and the internal oblique muscle ("internal inguinal ring"), then break through the peritoneum with a sudden thrust. If possible only two fingers should be inserted into the abdominal cavity and an attempt made to secure the vas deferens and draw the testicle to the opening made in the peritoneum; if the vas deferens cannot be found, the entire hand must be inserted into the abdominal cavity and a search made for the vas deferens and the testicle; if it cannot be found, the other hand should be placed into the rectum to press the viscera in the direction of the hand that is in the abdominal cavity. When the vas deferens or testicle is found, the operator must improvise the best and most simple way to get the testicle into the inguinal canal. When the testicle is in the inguinal canal, it should be brought to the surface, or as near to it as possible, and removed with an emasculator or ecraseur.

Pathological conditions of intra-abdominal cryptorchids may cause some inconvenience; but the greater number of cryptorchids are extra-abdominal and operators are only occasionally confronted with such conditions; a little care in determining the proper course to adopt in such cases adds to the success, and it is impossible to lay out a course that will be practical in every instance. After the operation the wound should be irrigated and carefully examined, and if the intestine does not extend into the inguinal canal he should be untied and placed into a clean comfortable stall.

After-care.—For the first four or five days the wound should be opened morning and evening and washed with soap and hot water. If any indications of sepsis are noticed the wound should be explored and carefully washed with an antiseptic solution. Moderate exercise should be given once or twice a day, and the feed used must be of good quality, given in small quantity for the first two or three days.

SURGICAL ITEMS.

How many of us have sat by the hour at the feet of some learned professor and seen wonderfully skilled operations performed, and listened to his words of wisdom in the surgical clinics; yet many of us could never consider such work worthy of much commendation while the poor brute groaned and fought from the acute pain of such operations as major punctured sole operations, or long, deep incisions in fistulous withers, or the frightful pain of neurectomy, when the near sighted operator would pinch the digital nerve with his forceps to distinguish it from the too neighborly artery; and all this cruelty with plenty of chloroform, ether and cocaine at hand. * * * The highest ambition of any surgeon should be to relieve pain and not to cause it.—(*Dr. J. P. Turner, A. V. M. A. Report, 1899.*)

Tetanus.—While all fair-minded, observant veterinarians have failed to note any appreciable benefit from the use of tetanus antitoxin in the treatment of tetanus, the same men never fail to laud this same product in the highest terms as a preventive. That tetanus antitoxin does prevent tetanus is no longer doubted by those who have given it a fair unbiased trial; so the time has now come when all up-to-date veterinarians, especially those practicing in districts where tetanus is prevalent, should consider their equipment incomplete without, at least, a small quantity of this serum within their reach at all times. It is very evident that within a comparatively short

time the veterinarian who neglects to immunize a patient that contracts a punctured wound will be called to account for the omission should tetanus result. The cost, which is already nominal, will be greatly reduced when it comes into more general use.—(*L. A. M.*)

Will the *sub-arachnoidean injection of cocaine*, which the human surgeons are rapidly adopting to produce anæsthesia (analgesia more properly speaking) of the abdomen and lower extremities, ever be introduced into veterinary surgery? According to recent reports from such eminent clinicians as Murphy and Senn, it is very evident that general anæsthesia with chloroform and ether, for all abdominal, pelvic and lower extremity operations, will soon be universally supplanted by the injection of a weak solution of cocaine upon the sensory columns of the lumbar cord. The effect which occurs shortly after the injection and lasts for more than an hour is that of complete suspension of sensibility, while the tactile sense and motion remain unaltered. The patient suffers from none of the unpleasant nor dangerous effects of ether and chloroform, feels no pain, and rapidly recovers the suspended sensibility. Certain salient points in the technique of its application may forever preclude its introduction into veterinary surgery, yet in view of its many indications we should try to overcome the obstacles. A prerequisite of the procedure is that the fluid be injected beneath the arachnoid membrane. Whether we will ever be able to accomplish this delicate feat is a matter for future discussion.—(*L. A. M.*)

The death of Professor Williams, principal of the New Veterinary College, Edinburgh, which occurred November 12th, following a brief illness, is a serious loss to the profession. His untiring efforts directed to the interest, emergencies and advancement of the veterinary profession, contributed much to his fame; his works on veterinary topics have made him a lasting reputation; and, we regret that one so useful to our cause, and so efficient in directing his energies, should sever his earthly relations while still in the acme of his devotion. As veterinary science progresses, his effort may be buried in the débris of other energies employed in the same direction; but, in obedience to a natural consequence, it will always be to the profession, "The principal stone of the corner," and the efforts of others will remain to be but individual marks of the craft inscribed upon the surface.—(*E. M.*)

THE ARMY VETERINARY BILL.

DISCUSSION IN THE HOUSE PRIOR TO ITS PASSAGE—MESSRS. HULL AND MONDELL ITS WORST OPPONENTS—VALIANTLY CHAMPIONED BY MESSRS. BINGHAM, SULZER, ADAMS, AND OTHERS—THE VOTE: AYES, 80; NAYS, 72.

[*From the Congressional Record, Dec. 6, 1900.*]

Mr. Bingham. I desire to offer as an amendment a provision which appears on pages 7 and 8 of the present bill, being paragraphs of the Senate bill which have been struck out in the preparation of this bill. I see in the report no statement of reasons why the Veterinary Corps, as established by the Senate bill, has been excluded entirely from this bill. I am desirous, however, to have an expression of the judgment of the House upon this question. I therefore offer as an amendment the provision beginning on line 21, page 7, and covering the whole of page 8, relating to the Veterinary Corps.

Mr. Hull. I object to going back now. We had better finish the bill.

Mr. Bingham. There is no going back.

Mr. Hull. We are considering the bill by sections, and we have passed over those sections which the gentleman now proposes to take up.

Mr. Bingham. We have not passed over these sections. They are parts of the Senate bill which have been excluded from this bill.

Mr. Hull. We have passed over those sections. If the gentleman desires to amend our bill by putting in those provisions, he can do that, I suppose, when we get through regularly with the bill.

Mr. Bingham. Why should not these provisions go in now as independent paragraphs the same as any other amendment?

Mr. Hull. Unless the gentleman proposes to offer his amendment to follow the provision in regard to the Nurse Corps, I object to going back, because I am anxious to get through with the bill.

Mr. Bingham. I cannot understand why there is any going back. The provisions which I offer have never been read. Therefore there is no going back. I claim that this amendment is fairly eligible for position in any part of this bill.

Mr. Hull. But the amendment, in my judgment, is not germane to the part of the bill we are considering. The gen-

tleman, if he wants to put in those provisions, taken from a part of the bill which we have gone over, ought to wait until we have completed the consideration of the subsequent portions of the bill. Unless we adhere to the regular order of proceeding we shall be constantly jumping backward and forward, considering propositions having no relevancy to the matter under consideration.

Mr. Bingham. There is no purpose to jump forward or backward. We have already considered paragraphs pertaining to the Surgeon-General's establishment; we have just concluded a paragraph pertaining to the nurses' establishment. The amendment I desire to offer has direct relation to those two paragraphs, and is consistent at this point as a part of the bill.

The Chairman. The gentleman from Pennsylvania proposes to introduce a new paragraph at this point. Is that the proposition?

Mr. Bingham. I simply ask that an additional paragraph, covering the wording of the Senate bill, may be considered at this time.

The Chairman. The Chair thinks that is the order. The Clerk will report the gentleman's amendment.

The Clerk read as follows:

After line 14, page 23, insert the following:

"SEC. 20. That the Veterinary Corps shall consist of—

"A chief veterinarian with the rank, pay, and allowances of a colonel, United States Army.

"An assistant chief veterinarian with the rank, pay, and allowances of a major, United States Army, to be promoted in 1905, after competitive satisfactory examination, from the grade of veterinarian and captain.

"Four veterinarians with the rank, pay, and allowances of a captain of cavalry, to be promoted in 1903, after competitive satisfactory examination, from the grade of assistant veterinarian and first lieutenant.

"Ten assistant veterinarians with the rank, pay, and allowances of a first lieutenant of cavalry, to be promoted, after a satisfactory examination, from the grade of assistant veterinarian and second lieutenant after one year's service in this grade.

"Twenty assistant veterinarians with the rank, pay, and allowances of a second lieutenant of cavalry, to be appointed after satisfactory examination: *Provided*, That these twenty positions shall include the veterinarians, first class, provided for in the act of March 2, 1899, who have passed satisfactory examinations, and also the six veterinarians, second class, who are now employed in the Army under said act of March 2, 1899.

"All rules and regulations governing the Veterinary Corps shall be

made by the Secretary of War, and the chief veterinarian shall report directly to that officer.

"For pay of officers of the Veterinary Corps, $33,500."

Mr. Bingham. Mr. Chairman, I fully recognize that the amendment I have submitted (being word for word a part of the Senate bill as it came to the House) would go to conference as soon as this bill passes, along with the other paragraphs of the Senate bill, and would be subject to consideration there. I think, however, at the same time, that this subject has been gone over so thoroughly that there is a conviction on the part of the House of the wisdom and necessity of the establishment of this additional branch of service, so as to be a part of the reorganization of the Army.

This proposition, Mr. Chairman, was carefully considered in the Senate, a great deal of testimony was taken in reference to it, and it passed that body and became a part of the bill which was transmitted to the House. There is nothing whatever in the report of the House Committee on Military Affairs, as I read it, that in any wise refers to crossing out or wiping out the paragraph in the Senate bill to which reference is made in the amendment. We have not been given any information upon that subject.

In the brief I hold in my hand, prepared by Senator Kenney, appears this amendment. The statement is made that the entire cost, under the amendment, will not exceed $6500. It is asserted in this brief that that is the entire cost over and above the cost of the civil employees now engaged in that service. It is also alleged that this will be more than compensated for by the organization of this veterinary corps which the amendment proposes.

Under the rulings of the Department, as well as the judicial decisions, the present force of the veterinary surgeons is declared to be a force of civilian employees—so rated and so paid —$75 a month to one class and $125 a month to another. They hold no commissions and have no commissioned relations with the other branches of the service. It is claimed in this proposition, which has had the indorsement of the most efficient and careful officers of the Army, General Merritt, General Brooke, Major-General Wilson, and other high officers, as well as the approval of President McKinley, General Miles, Commander-in-chief of the Army, Quartermaster-General Ludington, and others high in rank, that the proposition is one for the best interest of the service, and that under the proposed organ-

ization or reorganization of the Army such a proposition is desirable and necessary. I am informed that, as the Army will be reorganized under the provisions of this bill, if it becomes a law, there will be upward of 25,000 animals to be cared for. The cavalry, the artillery, and the necessary transportation required for the Quartermaster's Department will involve the care of this large number of animals.

Mr. Jett. Let me ask the gentleman from Pennsylvania a question for information.

Mr. Bingham. Certainly.

Mr. Jett. I would like to ask if the amendment that the gentleman offers is not a section of the bill that was before the Senate and passed by that body and came here during the last session of the House for our consideration?

Mr. Bingham. Absolutely the same, word for word. I have simply torn out the printed sheet of the original bill and presented it here as an amendment.

Mr. Chairman, this matter is so thoroughly understood by the House that I have no desire to take time to discuss it. I have shown what the increase of expenditures will be. I have shown that it would be a little in excess of $6000. Certainly such an organization, indorsed by the leading officers of the service, deserves consideration at our hands, and I think it but fair to say that by the action we now take here the House will either make the paragraph a part of the bill agreed to by both the Houses or leave it as a paragraph to be settled in conference.

[Here the hammer fell.]

Mr. Hull. Mr. Chairman, I sincerely hope that the amendment of the gentleman from Pennsylvania will not prevail. The Committee on Military Affairs took the Senate bill and struck from it all after the enacting clause and inserted the bill which is now reported here to the House and recommended by the committee. Now, if we take a part of the bill here and there and insert it in the House proposition, you reduce the power of the House to enforce its own will just to that extent; and it seems to me that the position of veterinary surgeon should stand with the other provisions of the Senate bill and let it go to conference as a whole.

Further than that, Mr. Chairman, I am strongly in favor of commissioned ranks for the veterinary corps of the Army. I believe they ought to have commissioned rank. As to whether we want to create a new corps, a new bureau in the Army, is

another and entirely different question, that ought to be thought over very carefully before this House shall adopt it. I do not believe we ought to put it in this bill. I will say, Mr. Chairman, at the request of one of my friends here, that the veterinary corps has commissioned rank in all the other armies of the world.

Mr. Bingham. That is true.

Mr. Steele. Assimilated rank.

Mr. Hull. Well, that is true of the army surgeons in other armies also. They do not have rank for their doctors there. It is only assimilated rank for them, too.

Mr. Sulzer. Mr. Chairman, just a few words with regard to the amendment offered by the gentleman from Pennsylvania [Mr. Bingham]. As a member of the Committee on Military Affairs, familiar with this subject, I concur in all that the gentleman has said. This amendment for a Veterinary Corps should be incorporated into this bill now. It should not be eliminated here and allowed to go to conference. There is no doubt in the world but what this Veterinary Corps is one of the most important at the present time in the Army. As the gentleman from Pennsylvania [Mr. Bingham] has truly said, there will be over 25,000 animals in the Army if this bill becomes a law, and as a friend of the horse I want to see this House adopt it. I trust it will. It is right. There ought to be veterinary surgeons to look after them. The Veterinary Corps is one of the most important branches in relation to the army of to-day, and this amendment should be adopted. To defeat it now will probably mean its permanent defeat. I appeal for fairness in the matter in order that our Army animals may be protected.

Mr. Gaines. Why did not the military committee report the provision in the bill which they brought in here?

Mr. Sulzer. The committee should have reported it.

Mr. Gaines. Why did they not report it?

Mr. Sulzer. Because the committee struck out the entire Senate bill and put in the War Department bill without any amendments whatever. This amendment was in the Senate bill passed last session.

Mr. Gaines. Why did they not leave that provision of the Senate bill in the bill which they brought in here?

Mr. Sulzer. They should have done so.

Mr. Gaines. Did they give any reasons for their failure to do so?

Mr. Sulzer. You will have to ask the chairman of the

committee about that. The minority of the committee had nothing to do with it; but as a member of the minority, and speaking for the veterinary surgeons of this country, and for the best interests of the animals that will be in the Army, I think this amendment should be adopted, and I hope every friend of the horse will vote for it.

Mr. Hay. Mr. Chairman, I am sorry that I can not agree with the gentleman from New York [Mr. Sulzer], because after a careful consideration of the provision contained in the amendment proposed by the gentleman from Pennsylvania [Mr. Bingham], after hearing all the evidence which was adduced before us, I came to the conclusion that it would not be for the benefit of the surgeons to have the Veterinary Corps established in the form in which it is provided in the Senate bill.

In the first place it creates a new bureau down here in the War Department. It creates a new staff bureau, and we may expect that bureau to be built up as other bureaus have been, at considerable cost. Moreover, the present Veterinary Corps, if they are given rank such as was suggested by the chairman of the committee [Mr. Hull], should be satisfied. That is all they ought to ask for. They have worked very well so far. They have done good service up to this time, and the animals of the Army have not suffered, so far as I have been able to ascertain. Therefore I do not see why we should create a new bureau in the War Department, at a considerable expense, when there is no necessity for it, and when these veterinary surgeons can have the rank which will give them the authority they now say is necessary in order to enable them to carry on their work in the Army. I hope, therefore, that the committee will vote down the amendment.

Mr. Gaines. What does the bill provide with reference to veterinary surgeons?

Mr. Hay. The bill does not provide anything with reference to veterinary surgeons, as it now stands; but, as I understand it, the probability is that in conference these surgeons will be given the rank of second lieutenants of cavalry.

Mr. Gaines. The bill does provide for veterinary surgeons.

Mr. Hay. Oh, yes; it provides for the employment of them now, but it does not provide for a bureau here.

Mr. Adams. Mr. Chairman, I ask the attention of the House for one minute while I submit some reasons why this amendment should be inserted in this bill.

This represents the progress that is taking place in our country, both in science and in army improvement. In the old days the farriers were sufficient to take care of the live stock of the Army, but with the progress of science now every man who practices the veterinary calling must have a diploma from a university. A man who is educated to that point should be raised above the farrier, and is entitled to the recognition of rank in the Army of the United States. If these men are to be established as a corps, they should be organized as such if you are to have efficiency throughout the Army, $2,000,000 representing the value of the live stock in the United States Army to-day. It is of sufficient value to warrant an additional $6-500 for their care and promotion.

Not only that; I would call attention to the fact that every civilized nation to-day has its veterinary corps to examine animals purchased. England, in the war with South Africa, sent veterinary surgeons to this country, when they were buying live stock, and saved hundreds of thousands of dollars in the purchase of those animals by means of careful inspection. There is another point I would earnestly press upon the House. One of the few disagreeable things that we want to forget about is the spoiled meat served to our gallant troops that were fighting in the armies of this country. If we had had this corps, that meat would all be inspected, and there could no such scandal take place.

It is seldom, Mr. Chairman, that I find myself in opposition to the committee. I can not agree with the suggestion of the chairman of the committee that this matter should go over so that it could be dealt with in conference with the Senate. If this House believes in the measure, they should vote for it now and put it in the bill. This is the proper place to put it in and let it be established, and then it is beyond peradventure and can not be traded off for any other proposition, and will be in the bill for the benefit of the Army and economy to the Government. It will be a recognition of a profession which is rising to-day; and all the veterinary schools and that great profession throughout our country are solidly behind this measure. I hope the House will act now and not trust to chance. A wise man never trusts to chance if he can get what he wants in hand. Vote to put this in as the Senate had it in the bill and it places this question beyond peradventure.

Mr. Steele. Does not the gentleman say that this bureau is to cost $6500?

Mr. Adams. Additional.

Mr. Steele. The cost is given here as $33,500.

Mr. Adams. That gives the entire corps. This will be an additional amount of $6,500.

Mr. Mondell. Mr. Chairman, I hope this amendment will not be adopted by the House at this or any subsequent time. I do not believe it is necessary for the best interest of the service; neither do I believe it would be wise to commission horse doctors as officers of the United States Army. It has been stated here that the armies of all civilized countries have a veterinary corps, with rank. It should have been stated "assimilated rank." Assimilated gives the pay, but not the honor or the title of the rank. There is not an army in the world that has a veterinary corps ranking with the officers of the line. It is not necessary, in my opinion, for the best interest of the service that the Veterinary Corps of the United States Army should have rank.

Mr. Butler. Will the gentlemen allow me to ask him a question?

Mr. Mondell. Certainly.

Mr. Butler. Why should we not give the horse doctor rank the same as we give the medical doctor?

Mr. Mondell. I think there is some difference between a man and a horse.

Mr. Butler. One is the doctor for the man and the other the doctor for the horse.

Mr. Mondell. I think there is a difference between doctoring one of our soldiers and doctoring an army mule.

Mr. Butler. Are they not both educated men, and ought not both to be men of intelligence?

Mr. Mondell. The fact that a veterinary might be an educated man is no reason why the horse doctor should be commissioned. An army surgeon in time of action is often necessarily under fire. If the gentleman will recollect the occurrences of the Santiago campaign, he will remember that the surgeons of the army the most of the time during the operations before Santiago were under fire quite as much as some of the men in the advance. The horse doctor, I do not imagine, under any circumstances, would ever be under fire. I see no reason why a horse doctor, any more than a wagoner, a blacksmith, or other men connected with the Army in various capacities, should also receive a commission.

Mr. Grosvenor. Will the gentleman from Wyoming allow

me to make a suggestion? The surgeon comes in immediate contact with the men about him who are engaged in carrying men on the stretchers to the hospitals, and furthermore, he comes in contact with other enlisted men who are employed with the men in the hospital, and it is necessary to give him some rank in order that he may discharge his duties and assert the difference in rank between himself and the enlisted men. That is not true in the case of the veterinary surgeon who goes to the cavalry stables to doctor their horses. You might as well give rank to the men who curry the colonel's horse as to confer rank upon the veterinary surgeons.

Mr. Mondell. I agree with the gentleman from Ohio in all that he says, and I thank him for his remarks. The surgeon in the Army is not only the physician who attends to the wounds and the ailments of the soldiers, but he is also the one who goes among the wounded in the hospital and on the field and cheers and encourages them, and he shares with them largely their privations and their dangers. He does not belong to the same class as the wagoners and the farriers.

It has been stated here that the change would only mean an additional expense of $6000. Possibly so at the time of the passage of the bill, but it means a constantly increasing corps of officers who in the course of time are to go to swell the retired list, and, instead of $6000 annual expenditure, in a short time it would add a very much larger sum. If we are not able to secure the services of good veterinary surgeons at the present prices paid, let us pay better prices for our veterinary surgeons, but never give horse doctors, honorable though their calling is, rank and authority with the fighting men of the American Army.

Mr. Fitzgerald of Massachusetts. May I ask the gentleman a question?

The Chairman. The time of the gentleman from Wyoming has expired.

Mr. Fitzgerald of Massachusetts. I want to say that he referred to the Santiago campaign, and undertook to show to the House that there was a difference between the doctor who doctors the soldiers and one who doctors the army mule. I want to say, as an incident of that campaign, that it developed that a horse doctor, Dr. Heidenkooper, was assigned to the treatment of soldiers in the hospital, so I do not think that that point amounts to much.

Mr. Bingham. Mr. Chairman, the gentleman who has

charge of this bill states that he does not desire to mar the integrity and unity of his bill for the reason that they have crossed out all of the Senate bill and submitted this as a substitute. He doubtless is as familiar as myself with what goes on in the conference committee. I have had some experience, in common with other gentlemen in the House, and it is simply that when a bill is presented, like this bill, a clean wipe-out, a clean submission of something new, that it comes to a mere barter and trade in conference—"if you will give us that, we will give you this," and you come into the House with a mongrel bill. So far as this bill is concerned I do not want it to have that form or shape. I want this committee to determine the paragraph one way or another and not subject it to rejection because some other paragraph may be admitted.

One word with reference to the statement of the gentleman as to the horse doctor, as he designated him, not being a party to field action or to the battle. Granted. The surgeon is only thus detailed for that special work; others are back in the hospital. The officers of the Ordnance Corps, a large and one of the most intellectual corps of the service, are not in action. It is only occasionally that an officer of the Engineer Corps of the Army is detailed to be in a position under fire.

Mr. Butler. How about the paymasters?

Mr. Bingham. The paymasters are never in action. That does not not make for or against the veterinary surgeon or lessen their usefulness.

As to the objection of the gentleman on the other side who says that the establishment will create a bureau in Washington. The whole cost of these surgeons will be $33,500, an increase simply of $6500 over the current law. If any bureau was ever established in Washington, they could have the supervision of only $33,500. Therefore, I contend that this criticism does not bring any strength against the proposition contained in the Senate bill.

Mr. Chairman, I ask permission to insert at the end of my remarks a "brief in the House of Representatives May 5, 1900, of facts in support of Senator Kenna's amendment to the Army reorganization bill, which passed the Senate and goes to the House of Representatives for concurrence."

The Chairman. Without objection the request of the gentleman from Pennsylvania will be granted. [After a pause.] The Chair hears no objection.

The brief referred to by Mr. Bingham is as follows:

Brief (S. 4300. In the House of Representatives, May 5, 1900) of facts in support of Senator Kenney's amendment to the Army reorganization bill, which has passed the Senate and now goes to the House of Representatives for concurrence.

Senator Kenney's amendment to the Army reorganization bill provides for the establishment of an organized veterinary service, with reputable officers, whose education and competency is insured by rigid examination; to replace the present system of employment of an unorganized class of individual civilians, with no rank, no future, no responsibility, and no official position.

The United States Army is absolutely deficient in a proper veterinary service, which exists in the army of every other civilized country in the world. The present system in the United States Army has less method in it than that found needful in any large contractor's stable or stock farm in the country.

ECONOMY.

The entire cost under the amendment is only $6500 over the present cost of civilian employees under the present system, and will be more than compensated for by the economy resulting from an organized veterinary corps.

The establishment of an organized veterinary service—

To give proper instruction in hippology, inspection of forage, stable hygiene, and farriery, to officers, cadets, non-commissioned officers, and farriers, at our military schools and large posts;

To furnish expert veterinarians for service as members on boards of purchase of remounts;

To furnish qualified inspectors of live stock and dressed meat for our soldiers' rations [there is not a qualified meat-inspection service in the United States Army];

To furnish practical services in prevention and cure of diseases—

is needed, both on the ground of economy, for the efficiency of the Army, and for the health of our soldiers.

The letters, copies of which have been furnished, from Major-General Merritt, Major General Brooke, Major-General Wilson, and numerous others of the higher officers of the Army indorse such an organization.

The establishment of such an organization has had the approval of the President, William McKinley.

The General Commanding the Army, Major-General Miles, and the Quartermaster-General, Brigadier-General Ludington strongly approve and favor the amendment.

(Committee on Army legislation, American Veterinary Medical Association, Rush S. Huidekoper, secretary, Washington, May 4, 1900.)

Mr. Gaines. I should like to ask the gentleman from Pennsylvania if the veterinary surgeons contemplated by this amendment are to be graduates of a school or college.

Mr. Bingham. The surgeons employed under this corps will be subject to the directions of the Secretary of War, who will make regulations as to their credentials.

Mr. Gaines. Does the gentleman give that as one reason why this amendment should pass?

Mr. Bingham. I do. The veterinary surgeon not only does this work for the benefit of the animal, but for the protection of millions of dollars of Government property.

Mr. Green of Pennsylvania. Mr. Chairman, it seems to me, from the remarks which have been made by members of the House in opposition to this amendment, that the value of the horse and mule in the Army is not at all appreciated. I call the attention of gentlemen to the fact that the fighting of our Army is to-day on an entirely different principle from the fighting of twenty years ago, or even of ten years ago. The long-range guns of the artillery and the infantry require the utmost celerity of movement. We shall find in the future that the victories will be gained as often by the rapid movement of our cavalry and our infantry as in any other manner. In fact, the army horse and mule rank second only to the soldier and the gun.

This proposition seems to me an exceedingly fair one. Any man who has watched the movements of even an infantry regiment must have seen the absolute necessity of having some responsible, qualified person in charge of the horses of a regiment. Why, sir, an infantry company can be delayed not only hours, but days, by having a few of its mules out of condition. Almost every part of the impedimenta of an infantry company to-day is moved by the company wagons, and the movements of the company are entirely dependent upon having the horses in condition to move rapidly. If there is any valuable provision that could be introduced into this army bill—one which will pay the nation in time of war for its adoption, one which would help in winning victories, whether on this side of the ocean or on foreign shores —I believe that this amendment, if adopted, will be one of the most valuable improvements that can be made in the framing of an army bill.

I ask the members of the House to consider the fact that most of the military work, not only carried on to-day, but which will be carried on by the United States in the future, will be in foreign lands. We all know that the sickness which has prevailed among our troops in the Philippine Islands and in China has been shared by the horses and mules of the Army. Any man who has watched the war in South Africa has had forced upon his attention the fact that the trouble with the English troops has been that they have been constantly hampered by the sickness of their horses everywhere. Thousands and thousands of horses and mules have recently been purchased in this country for use in Africa, simply because of the terrible amount

of death and disease among the horses there. It is an old saw that every man's business is nobody's business, and if you want the horses and mules of the Army to be taken care of—if you think they are worth taking care of, as I certainly do—it is absolutely necessary to have a bureau to take charge of this subject, with a competent head, and with persons under him qualified for the peculiar work.

There is only one way to get men who are properly qualified to take charge of horses or to give general directions for that purpose, and that is by giving qualified men rank in our Army. It requires educated men to take care of horses. Perhaps just as much education is required in this line as in taking care of men. And, as I have just said, the only way to secure proper service in this line is to give rank to the officers who have charge of such work. It must be a badge of honor. I am not only pleased to vote for this proposition, but I think it is the duty of every member, especially as the expense of the proposed amendment, is certainly not great—though if it were five times as much I should favor it—I believe it to be the duty of every man who has at heart the creation of an efficient Army to vote for this provision.

Mr. Butler. Mr. Chairman, I desire to say one word in favor of the most faithful animal that ever moved a foot or served a master. I would go further than the present proposition ; I would require, if I had the power, that these veterinary surgeons should go into places of danger to attend and treat horses, in the same way that a medical officer is required to go on the field of battle under the present regulations. I think this regulation will overcome the distinction made by the gentleman from Wyoming in answer to a question which I put to him a few moments ago.

Mr. Steele. Mr. Chairman, it has been stated by the gentleman from Pennsylvania that the total cost of this service, in the pay of the officers provided, would be $33,500. I find by looking at the pay table that a colonel who has just entered the service is entitled to $3500 ; and this bill provides for 1 colonel. A major (one such officer being provided by this bill) receives as pay proper $2500, allowing nothing for longevity service. Then the amendment provides for 4 captains, the pay of whom would be $2000 each, without any additional allowances, amounting to $8000. Then there are to be 10 first lieutenants, at $2000 (saying nothing of allowances), making $20,000. Then there are 20 second lieutenants at $1500 each (taking

into account nothing for allowances), making $30,000. It will thus be found that the total amount of pay for this corps under this amendment will be $64,000. In addition to that, officers who have been in this service for fifteen years as veterinarians, would receive longevity pay and other allowances. The cost for pay and allowances, saying nothing of traveling expenses, would be about $100,000.

I think, as the chairman of the committee has suggested, that it would be perfectly fair to let this matter go to conference with the other provisions of the bill. In that way we could arrive at a much better conclusion than, I think, can be arrived at by undertaking to act on this subject here and now. While this amendment at the beginning would simply call for a colonel and a major at the War Department headquarters, mark my words, inside of five years the number of field officers will be materially increased, as well as the expense.

Mr. Sulzer. The gentleman says let this go to conference. Why not adopt the amendment and then let it go to conference?

Mr. Steele. If we adopt the amendment, there can be no conference, so far as this provision is concerned.

Mr. Sulzer. The gentleman is mistaken.

Mr. Steele. I beg the gentleman's pardon. This is a provision of the Senate bill, and if the House and the Senate agree upon the proposition there will be nothing to confer about.

Mr. Parker of New Jersey. Mr. Chairman, many of my friends are veterinary surgeons. We should have the very best talent in that service that the United States can afford, and the most experienced surgeons should be found and honored in our Army. But I cannot accept the proposition which is now before the House as an amendment to the pending bill; and I beg the House to bear with me a moment and to understand with me what that provision is.

As has been pointed out by the chairman of the Committee on Military Affairs, it is not a question whether veterinary surgeons should have rank or pay or honor, but whether they should constitute a new and separate staff corps. It is whether we should accept this particular provision for such a corps without recommendation by the War Department or the Army, without the opinion of that Department, and without opportunity under the rules to perfect this proposition. We are asked not to accept surgeons as officers, but to establish a new corps. What does that mean?

What is a corps? It is an independent branch of the Army.

If this provision is adopted it means that the officers of such a corps are not under the control of the officers of the line.

In the last war with Spain there was a case—there may have been others—but there was a case where a brigadier-general in charge of a camp with a thousand sick men found that the doctors in charge of the hospital were spending their afternoons on hotel porticos away from the camp. He told them to to go back to duty and take charge of the sick men in the hospital. He was informed that he was not in a position to give such an order. And, Mr. Chairman, he only got the medical corps back to their duties when, after going 120 miles, he was enabled to find at division headquarters an authority which had the right to give the order to them.

Now, a doctor may rightly order a man out of the ranks, if he is sick and unable to perform duty, and the doctor may rightly send him to a hospital whether his commander assent or no. That is where the question is of human life. But when we come to dealing with horses and mules, a very different case is presented, for there may be conditions which require the quartermaster to work his mules or horses for army transportation whether they are sick or well, and there should be no interference with the performance of his duty under such circumstances.

If a captain of a troop or battery desires to use the horses or mules under his command, sick or well, and finds it necessary to do so if the exigencies of the service so require, no man should be allowed to interfere. You can and should employ a veterinary surgeon where his services are needed; you may make him an officer, but you cannot safely employ or establish a veterinary corps which shall in any way supersede the power of the commanding officer.

As I have already said, the surgeon may send a man into the hospital and may order him out of the ranks in case of sickness, but the officer in charge of a battery or a company has the right to use horseflesh—noble as that animal may be—under any circumstances which may present themselves to him. He has enough staff subjection already. The man of the Army, the officer of the line, is subject to a system of staff inspection and orders unknown in any other country. It may be now noticed because it will come up later on in the consideration of the bill. He cannot get provisions without going to the subsistence department or transportation without the aid of the quartermaster's corps.

He cannot get his men paid without going to a separate pay department, nor get guns or ammunition without applying to a separate ordnance department. His life is a life of requisitions and red tape. Other armies put these departments in each division under the general commanding the division, and in each post, while the staff have assimilated rank and good pay, they are under the commander of the post, under any captain of an independent command, who keeps, and is bound to keep, all branches of the service under his control so far as his command extends.

The Chairman. The time of the gentleman from New Jersey has expired.

Mr. Sulzer. I ask that the gentleman's time be extended five minutes more.

The Chairman. The gentleman from New York asks that the time of the gentleman from New Jersey may be extended five minutes. Is there objection?

There was no objection.

Mr. Parker of New Jersey. In every other army, especially in the German army, the staff in all its branches is made the servant, or at any rate the friend, of the line. Our great Secretary of War, the greatest, I believe, that we have had since Stanton, says that the need of our Army is to bring the line and staff together. He therefore proposed and urged upon us that details should go from the line to the staff, and from the staff back to the line, as proposed in the Senate bill; that there should be only details and no permanent appointments, so that the whole Army should be one, working harmoniously together through the system of details without subjection of the line to permanent and separate staffs.

The committee and perhaps a majority of this House concluded that we should go slowly. That may be wise. We therefore provide by the House bill that there shall be details, but only in the lower grades of the staff, and we add to the Secretary's plan that these details shall be settled by competition before boards of officers, so as to avoid favoritism and to determine fairly what men shall go into the lower ranks of the staff. The bill thus provides for a perpetual change and flow between the line and the lower ranks of the staff of the Army.

For the higher ranks of the staff the bill provides that from those who have been detailed there shall be competitive examination for appointment to these higher ranks, so that we shall get the cream of our young men in the great staff departments

of the Army, while we give them enough army service to keep them in touch with the needs of that Army, and prevent the disposition to red tape that assails anybody who is permanently in a separate corps.

That is the object of this bill, to abolish or, at least, mitigate the evils of separate staff corps. Let us not attack the general object of this bill by establishing another separate corps and counteract the views of our great Secretary of War by putting alongside of the many independent staff corps another corps with independent command, free from control by the line.

Give rank if you please, or honor if you please, but let us aim to unite and not to disunite each division of the Army.

This provision is in the Senate bill. When the matter goes into conference a satisfactory and proper section can be put in its place. But if this amendment be adopted, it must be taken as it is, with its faults.

Mr. Bingham. Mr. Chairman——

The Chairman. Debate on this amendment is exhausted.

Mr. Hull. I ask for a vote on the amendment.

The question was taken on the amendment of Mr. Bingham, and the Chairman announced that the "noes" appeared to have it.

Mr. Bingham and Mr. Sulzer demanded a division.

The committee divided; and there were—ayes 58, noes 56.

Mr. Hull. I ask for tellers.

Tellers were ordered; and the Chairman appointed Mr. Bingham and Mr. Hull.

The committee again divided; and the tellers reported—ayes 80, noes 72.

Accordingly the amendment was agreed to.

BIBLIOGRAPHY.

METHODS FOR THE EXAMINATION OF MILK, for Chemists, Physicians, and Hygienists. Compiled by Dr. Paul Sommerfeld, of the Emperor and Empress Frederick Hospital for Children of Berlin. Translated by Dr. A. T. Peters, of the University of Nebraska, and R. S. Hiltner, A.M., Instructor in Chemistry at the University of Nebraska. Chicago: Alexander Eger.

One by one the subjects which are of practical importance to the veterinarian are being abridged into comprehensive little "guide books" for ready reference without the necessity of wading through the heavy and unwieldy scientific treatises, and in the accomplishment of this important undertaking the pro-

fession is under many obligations to Mr. Eger, who has gone about this task in a most intelligent and patriotic spirit, producing them in rapid succession, selecting the best authorities in different tongues, and securing their translation, and Americanization by men of well known ability in the particular field treated of.

We have just received from the publisher a copy of the above work, and after a casual perusal of it we have no hesitation in saying that within the 100 pages comprising the little work the subject is thoroughly discussed, and rules laid down for the examination of milk by commercial analysts, market inspectors and health officers. As showing the scope of the contents the work is divided into eight sections, as follows: I, Qualitative Examination of Milk; II, Methods of Quantitative Analysis; III, Detection of Preservatives; III, Detection of Adulterations; V, Estimation of Insoluble Foreign Matter; VI, Examination of Condensed Milk and Curdled Milk; VII, Appendix, treating of the Examination of solid forms of preserved milk; VIII, An extensive Bibliography for the guidance of those who wish to examine further details of any branch of the subject. The volume may be obtained at small cost from the publisher, Alex. Eger, 134 East Van Buren Street, Chicago.

PROCEEDINGS OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION, Session of 1900. Edited by the Publication Committee, M. H. Reynolds, Chairman, St. Anthony Park, Minn. St. Paul, Minn: Pioneer Press Co.

In less than ninety days the volume of 1900 was in the hands of the members, and they are enabled to deliberate upon the full transactions of the convention held at Detroit; to read at their leisure the papers presented, the discussion of those read, and the business transacted, as well as the details of the clinics, the attendance, the entertainment, and all other matters of interest which occurred. The volume contains the names of the honorary members, which now number 26, three of whom are dead, and a list of the Presidents and Secretaries since the organization of the Association. These latter lists were very carefully verified by Chairman Reynolds, and are as follows: *Presidents*—1863–64, J. H. Stickney, Massachusetts; 1864–65, A. S. Copeman, New York; 1865–66, C. M. Wood, Massachusetts; 1866–67, R. H. Curtis, New York; 1867–69, R. Wood, Massachusetts; 1869–71, E. F. Thayer, Massachusetts; 1871–75, A. Large, New York; 1875–77, A. Liautard, New York; 1877–79, C. P. Lyman, Massachusetts; 1879–81, J. L. Robert-

son, New York; 1881–83, W. Bryden, Massachusetts; 1883–85, W. B. E. Miller, New Jersey; 1885–86, L. McLean, New York; 1886–87, A. Liautard, New York; 1887–89, R. S. Huidekoper, Pennsylvania; 1889–90, C. B. Michener, New York; 1890–92, R. S. Huidekoper, Pennsylvania; 1892–93, W. L. Williams, Indiana; 1893–96, W. Horace Hoskins, Pennsylvania; 1896–97, F. H. Osgood, Massachusetts; 1897–98, D. E. Salmon, District of Columbia; 1898–99, A. W. Clement, Maryland; 1899–1900, Leonard Pearson, Pennsylvania; 1900–1901, Tait Butler, Indiana. *Secretaries*—1863, A. Liautard, New York; 1864, R. Jennings, New Jersey; 1865–67, C. Burden, New York; 1867–69, J. F. Budd, New York; 1869–74, J. L. Robertson, New York; 1874–77, J. D. Hopkins, New Jersey; 1877–80, A. A. Holcombe, New York; 1880–89, C. B. Michener, New York; 1889–93, W. Horace Hoskins, Pennsylvania; 1893–94, T. J. Turner, Missouri; 1894–95, Leonard Pearson, Pennsylvania; 1895–1901, S. Stewart, Kansas.

The Constitution and By-Laws are printed in full, as well as the proceedings of the fourth annual meeting of the United States Experiment Station Veterinary Association, with the papers presented.

The volume is a perfect résumé of the transactions of the association, and forms a valuable addition to the veterinary library.

SOCIETY MEETINGS.

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The eighteenth meeting was held at the Sherman House, Chicago, November 15 and 16, 1900, and was called to order at 2.30 P. M., with President W. J. Martin in the chair.

The following members were present: W. J. Martin, Kankakee; N. P. Whitmore, Gardner; Albert Babb, Springfield; N. I. Stringer, Watseka; H. A. Pressler, Fairbury; J. F. Pease, Quincy; W. C. Hannawalt, Sheffield; R. F. Hoadley, Yorkville; M. Wilson, Mendota; W. H. Welch, Lexington; A. H. Baker, R. G. Walker, J. F. Ryan, E. L. Quitman, S. S. Baker, J. L. Siegrosser, and A. C. Worms, of Chicago. Visitors: T. M. Doran, Evanston, and J. R. Kelso, Hebron.

The minutes of the previous meeting were read and approved.

President Martin then read his annual address,* which was of a most interesting character.

Dr. W. C. Hannawalt then gave a couple of very interesting case reports, one of "Actinomycosis," † and the other that of a very "High Temperature," † the animal dying in an hour and one-half, showing most violent symptoms of delirium and viciousness. Discussed by Drs. Quitman, Babb, Pressler, Pease, Baker and Martin.

A very able and interesting paper was now read by Dr. Campbell, of the United Pharmacal Co., Chicago, on the "The Antiseptic Treatment of Wounds by the Use of Oxychlorine, a Chemical Combination of Oxygen and Chlorine." Discussed by Drs. Worms, Babb, A. H. Baker, Pease, Walker, and Quitman.

Dr. W. H. Welch now gave a couple of interesting case reports—"Paint Poisoning in Cows" and "Retained Fœtal Skeleton in a Bitch." Discussed by Drs. Babb, Kelso, and Baker.

Meeting was now adjourned to meet at 9 A. M., November 16th, at Chicago Veterinary College for clinics.

November 16th.—Meeting reconvened at 3.30 P. M. at the Sherman House, President Martin in the chair.

Dr. E. L. Quitman read a very interesting paper on the "Action of Formaldehyde." Discussed by Drs. Martin, Pease, Wilson, A. H. Baker, Siegrosser and Griiner.

The society now proceeded to the election of officers for the ensuing year.

Dr. W. J. Martin, of Kankakee, was renominated for the presidency but respectfully declined the honor, having served the association faithfully the past two years.

Dr. A. C. Worms, of Chicago, was nominated and respectfully declined the honor.

Dr. M. Wilson, of Mendota, was now nominated, as was also Dr. T. J. Gunning, of Neponset.

Balloting then proceeded and Dr. Gunning was declared elected President for the ensuing year.

For Vice-President Doctors Worms and Stringer were nominated, and balloting resulted in the election of Dr. Worms.

Dr. W. H. Welch, of Lexington, was unanimously elected to the office of Secretary.

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* Printed elsewhere in this issue.

† Will be printed in February REVIEW.

Dr. R. G. Walker, of Chicago, was unanimously elected to the office of Treasurer.

Drs. Pease, Siegrosser, and Frye were unanimously elected as the Board of Censors.

The newly elected officers now assumed control. In the absence of Dr. Gunning, Dr. Worms took the chair.

A unanimous vote of thanks was given Dr. Martin for his untiring efforts during his term of office as President.

The chair appointed Drs. Quitman, Baker, and Wilson as a committee to audit the books and report at once. A balance was reported on hand of $26.84.

On motion it was decided that the semi-annual meeting be held in Bloomington.

On motion a committee of three acting with the officers were instructed to draft resolutions asking Governor-elect Yates to appoint a graduate of a recognized veterinary college to the office of State Veterinarian.

Motion empowering Dr. A. H. Baker to purchase association stationery. Carried.

Motion to refer bill of $20 of S. S. Baker to the Auditing Committee. Committee reported that it be paid. So ordered.

Society adjourned. W. H. WELCH, *Secretary.*

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

The semi-annual meeting of the society was called to order by Dr. A. H. Hartwig at 3 P. M. at the Kirby House. The roll-call showed the following present: Drs. S. Beattie, W. G. Clark, B. L. Clark, H. P. Clute, C. Evans, H. F. Eckert, E. R. Flack, A. H. Hartwig, Chas. Koehne, G. Ed. Leech, E. L. Morgenroth, E. A. McCullough, E. H. Newton, C. W. Ormond, J. F. Roub, D. Roberts, Chas. Schmitt, S. S. Snyder. Visitors: Dr. J. M. O'Reilly, Merrill, Wis.; Dr. R. E. Cochrane, Milwaukee, Wis., and Dr. A. J. Nelson, Stoughton.

The Secretary reported in regard to replies from some members in arrears. It was moved by Dr. Snyder and seconded by Dr. Clute that one-half of Dr. Kenyon's dues be remitted, and the Secretary be so instructed. Carried. The collection of back dues was discussed by Drs. Flack, Roub, Clute, W. G. Clark, Ormond, Leech. It was moved and seconded that a revisionary committee be appointed in regard to the collection of back dues. Carried. The President appointed Dr. Ed. Flack, Dr. C. H. Ormond and Dr. S. S. Snyder.

The Secretary reported in regard to members of the Bureau of Animal Industry being granted certificates of honorary membership. Discussed by Drs. Flack, Leech, Clute and W. G. Clark. It was moved and seconded that that part of the constitution in regard to honorary membership for members of the B. A. I. be stricken out. After discussion the motion was withdrawn.

Dr. A. H. Hartwig brought up the matter of prosecutions under our State Veterinary Law. Discussed by Dr. Roub, A. H. Hartwig, Schmitt, Clute and Leech. It was moved and seconded that a committee be appointed to draw up resolutions in regard to prosecutions under the State law. The President appointed as a committee on resolutions to report at the evening session, Drs. Leech, Clute, Roub, Snyder and Evans.

It was suggested by the President that a standing committee on Veterinary Legislation be appointed. Discussed by Drs. G. Ed. Leech, Clute and Schmitt.

Moved and seconded that the Secretary be instructed to inform Dr. H. L. Russell, that the use of tuberculin by students of the agricultural course in testing herds of cattle conflicts with the present State law, and that they render themselves liable to prosecution under the same. Carried.

It was moved and seconded that a standing committee on legislation be appointed. Carried. Dr. Leech recommended that the Chair have the appointive power in regard to this committee and that one or two members be appointed by the Chair each year. Discussed by Drs. Clute, Schmitt and Flack. Motion carried.

Dr. Leech announced that Dr. Hughes would be present at the session this evening and at the clinics to-morrow.

The use of a lapel button was discussed and the Secretary was instructed to call on Bunde & Upmeyer and get prices.

Under applications for membership the applications of Dr. J. M. O'Reilly, R. E. Cochrane and A. J. Nelson, were received and were reported favorably by the Censors. On motion they were declared elected by acclamation.

Dr. Hartwig gave a short *résumé* of the Detroit meeting. The programme for the evening and to-morrow forenoon was read.

Adjourned to 7.30 P. M.

Evening Session.—The evening session was called to order by the President at 8.30 P. M. Present: Drs. Beattie, W. G. Clark, B. L. Clark, Clute, Evans, Eckert, Flack, Hartwig,

Koehne, Leech, Morgenroth, McCullough, Newton, Ormond, Roub, D. Roberts, Schmitt, Snyder, O'Reilly, Cochrane, Nelson, Harrison. Dr. Jos. Hughes, Professor of Anatomy of the Chicago College, was present.

The committee on resolutions in regard to prosecuting board of the society, Dr. Leech, as chairman, presented the following resolutions:

WHEREAS, This society realizing the fact that the time has come for some action to be taken in the matter of the prosecution of illegal practitioners in our State, be it, and it hereby is

Resolved, That the Chair be authorized to appoint a committee of five (5) members, whose term of office shall be as follows: One for one year, one for two years, one for three years, one for four years, and one for five years, and at the annual meeting in 1902 one member shall be appointed for five (5) years and thereafter one member shall be appointed each year for a term of five years. Such appointments shall be made by the Chair and it shall be the privilege of the Chair to fill all vacancies that may occur on the committee, and it is further

Resolved, That the Chair shall as far as possible, in making up this committee, distribute its members over the whole State, and it is further

Resolved, That in creating this committee it shall be for the benefit of the society only. It is further

Resolved, That this committee shall be known as the Prosecuting Board of this society. Duties of the Board: (1) To prosecute illegal practitioners; (2) To distribute literature to such practitioners whenever requested by any member of the society; (3) The members of this board shall be subject to call by any member of the society and he shall be paid by the practitioner calling him five dollars ($5) per diem and actual expenses incurred. It is further

Resolved, That the expenses of the board shall be met by the society —for stationery, the Secretary to furnish the same. And it is

Resolved, That this board shall consist of an elective President and Secretary, who shall report to the Society the work done semi-annually.

On motion the resolution was adopted and the President appointed the following members of the board: For 1 year, Dr. Chas. Koehne, Paynesville; 2 years, Dr. Chas. Schmitt, Dodgeville; 3 years, Dr. J. M. O'Reilly, Merrill; 4 years, Dr. S. J. Beattie, Madison; 5 years, Dr. S. S. Snyder, Cedarburg. The Board elected Dr. Snyder President, and Dr. S. J. Beattie, of Madison, Secretary.

Moved and seconded that the President have appointive power in filling vacancies in the Committee on Legislation. The President appointed as a committee, Drs. H. P. Clute and G. Ed. Leech for two years, Drs. D. Roberts and R. S. Heer for four years, Drs. C. Evans and Jos. Roub for six years.

Reading of Essays and Communications.—Dr. R. H. Harrison read a paper on "Meat Inspection in our Abbatoirs," giv-

ing a brief outline of the symptoms and post-mortem appearances of the diseases for which animals are condemned by our inspectors, including swine plague, Texas fever, anthrax, tuberculosis and actinomycosis. Discussed by Drs. Schmitt, Clute, Caldwell. Discussion closed. On motion a vote of thanks was tendered Dr. Harrison for his paper.

Dr. Beattie read a paper on "Something about Shoeing." Discussed by Drs. Leech, Roub, Clute, Schmitt and Flack.

Dr. Jos. Hughes, of the Chicago Veterinary College, was present and gave a very interesting talk in regard to balancing the foot, shoeing, etc. On motion a vote of thanks was tendered Drs. Beattie and Hughes for their excellent communications.

Dr. A. H. Hartwig reported 28 cases of parturient paresis with 26 recoveries. Treated by potassium iodide. He recommended thorough massage. If unable to tie up on sternum, frequent turning is recommended and give small doses of aromatic spirits ammonia. Discussed by Drs. Schmitt, Beattie, Eckert, Clute, Roub, Snyder and Evans. Discussion closed.

Dr. Roub brought up a case of supposed lightning stroke and requested information in regard to post-mortem appearances. Discussed by Drs. Harrison and Clute.

Adjourned to meet at 8.30 in the morning, taking a car for Dr. Roberts' hospital.

Sept. 12.—The members of the society, after a twenty-mile trolley ride, met at the hospital of Dr. Roberts, at Waukesha. The Doctor has a commodious and well appointed hospital, and the following operations were performed:

Spaying heifer, Dr. Chas. Schmitt; spaying pig, Dr. J. F. Roub; spaying bitch, Dr. D. Roberts.

Castration, standing operation, Dr. H. P. Clute.

Umbilical hernia, Dr. Jos. Hughes.

When the bitch was prepared for operation it was discovered she was pregnant, and the uterus and appendages were removed. The operation was performed under the influence of chloritone.

The applications of Drs. C. M. Crane, of Waukesha, and Dr. L. J. Tasche, of Sheboygan, were presented, and were reported on favorably and they were elected to membership. There being no further business the society adjourned to meet in Madison during the month of February.

W. G. CLARK, *Secretary.*

Note.—The annual meeting of the Society of Veterinary

Graduates will be held in Madison, Wis., February 5th and 6th, 1901. An interesting programme will be presented and clinics will be held on the second day. The members have been invited to visit the Experiment Station. All graduates are cordially invited to be present. W. G. CLARK, *Secretary.*

AMERICAN VETERINARY MEDICAL ASSOCIATION.

President Tait Butler, Manhattan, Kansas, has appointed the Committee of Arrangements for the Atlantic City meeting as follows: Dr. Wm. Herbert Lowe, 188–190 Ellison Street, Paterson, N. J., Chairman; Dr. T. Earle Budd, Orange, N. J.; Dr. Thos. E. Smith, Jersey City, N. J.: Dr. Robert W. Ellis, New York, N. Y.; Dr. W. Horace Hoskins, Phliadelphia, Pa.

Dr. Wm. Herbert Lowe, Chairman of the Committee of Arrangements for 1901, writes the REVIEW as follows: "I believe that the meeting of the National Association in New Jersey in 1901 is calculated to do great good in this State, and in turn there is very little doubt in my mind but that the A.V.M.A. will be materially strengthened by recognizing New Jersey's claims. I propose to set all the machinery of our amalgamated State association at work to make the first meeting in the new century surpass anything that has ever been achieved on this continent, and I realize that this is saying a good deal . . . I would suggest that half of one day be set aside for the clinic. Philadelphia and New York will be expected to do their share. Both of these great cities are not only in close proximity to New Jersey's famous seaside resort, but each is the seat of a great university with a veterinary department. Each of these veterinary schools will be expected to send two or three of their best operators. . . . A properly conducted veterinary clinic will in itself draw practitioners from all over the country. There is no question but that the clinic is a popular feature, but it will have to be conducted differently from some of those we have had if it is to retain its popularity with the profession. . . ."

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly and annual meeting was called to order by President Robertson in the lecture room of the New York-American Veterinary College, on Wednesday evening, Dec. 5, 1900. Those present at roll-call were Drs. Clayton, Drucker,

Ellis, Grenside, Goubeaud, Hanson, Lellman, Parry, Robertson, and Sherwood. As visitors, veterinary students Wertheimer and Bose and Counsellor Frank L. Stevens.

Dr. Clayton gave a report on an exaggerated case of laminitis, its treatment and termination; exhibiting the feet and lower section of legs as dried specimens. Dr. Clayton's report on the case was very interesting, as were the specimens, which showed the pedal bones to have assumed a perpendicular instead of horizontal relation to the sole. In one of the feet it had gone beyond the perpendicular even.

During the discussion of this case, Dr. W. C. Bretherton's son, Dr. George Bretherton, brought in his father's dues, and his regards and best wishes for the association's future, the good Doctor being too sick to attend, having been, in fact, a *very* sick man for some time past.

After the discussion on Dr. Clayton's case had been finished, Treasurer Hanson was called upon by the President for a report. Dr. Hanson reported having received from the Secretary during the year, $77, and having expended during the year $71.84, leaving a balance in the treasury of $5.16. Moved by Dr. Grenside that the Treasurer's report be accepted. Seconded and carried.

There being no committees present to report, the election of officers for 1901 was the next order of business.

Moved by Dr. Clayton that the By-Laws be suspended, and that one vote be cast for the reëlection of the present officers collectively. The Secretary raised as an objection to the motion, that he desired to be released from office, and take his place in the ranks, where he felt he could be of use to the association; and favored the infusion of new blood in his office, and requested that the several officers be elected individually, as was customary. Dr. Clayton withdrew his motion and nominated for President Dr. Jas. L. Robertson. Dr. Robertson said, he, too, like the Secretary, would like to take his place in the ranks, having served two full terms, since finishing his predecessor's term, but was ruled down, and was unanimously elected President for 1901.

Dr. Ellis then nominated for Vice-President Dr. Harry D. Hanson. Nominations for this office were closed and Dr. Hanson was unanimously elected Vice-President for 1901.

Several nominations were made for Secretary, including the present incumbent, all of whom declined. Dr. Hanson then nominated Dr. Keller (absent), and he was elected subject

to his acceptance. On being notified of his election he declined to serve, hence no Secretary for 1901 has been elected.

Dr. Ellis nominated Dr. F. C. Grenside for Treasurer. Nominations were voted closed, and Dr. Grenside was unanimously elected Treasurer for 1901.

Under the head of "New Business," Dr. Clayton took up the old subject of how to enthuse the members to attend the meetings in greater numbers; and the possibility of clinics at these meetings was suggested. This had the effect of stimulating an animated discussion, in which Dr. Goubeaud, of Brooklyn, took an active part; and the scheme seemed to meet the approval of all present, and it was finally agreed to try and arrange for a clinic at the next meeting, Dr. Parry volunteering to stable the patients, be they one, or two, or three, after the operations. This offer was accepted.

Dr. Hanson then reported to the association an illegal practitioner, whom he said he had in a position to prosecute, having all the necessary evidence, and an offer from Mr. Stevens to prosecute him for fifty dollars. Mr. Stevens was then introduced, and told the members how he would proceed in such a case, and made so favorable an impression on all present, that it was finally decided to give him the case to prosecute.

The meeting was then formally adjourned and the members repaired to the lower hospital ward, to examine two interesting cases of paralysis in horses, one of the fore, the other of the hind extremity.

ROBERT W. ELLIS, D.V.S., *Secretary.*

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

This association will meet at the Ohio State University, Columbus, on the afternoon of Jan. 16, continuing all day on the 17th. There will be good clinics if suitable material can be secured. WM. H. GRIBBLE, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The annual meeting will be held in Trenton, N. J., Jan. 10th. The new constitution and by-laws revised to meet the requirements of the amalgamation will come up for adoption, officers will be elected, a State committee will probably be appointed to coöperate with the Committee of Arrangements for the meeting of the American Veterinary Medical Association at Atlantic City next September, and interesting papers will be read. All

veterinarians, residents of the State of New Jersey, whether members or not, are invited to attend.

IOWA STATE VETERINARY MEDICAL ASSOCIATION.

Secretary Brown writes us that the next meeting will be held in Des Moines, January 23 and 24, 1901, and that everything indicates an unusually good meeting.

THE NORTH CAROLINA STATE VETERINARY MEDICAL ASSOCIATION will meet in Raleigh this month, when strenuous efforts will be made to have several bills passed looking to the protection and advancement of the profession in that State.

THE SOUTH DAKOTA VETERINARY MEDICAL ASSOCIATION holds an important meeting at Station Hotel, Huron, S. D., Jan. 15, and Secretary Foster invites all veterinarians to be present.

NEWS AND ITEMS.

DR. C. M. MCFARLAND, of Cincinnati, spent his holiday vacation with his parents and friends in Kansas City, Kansas.

THE CHICAGO VETERINARY COLLEGE has an attendance this session of 93 students. Quite an improvement over recent years.

CHARLES TOMLINSON, D.V.S., son of Dr. Wm. J. Tomlinson, of Williamsport, Pa., was shot and killed the latter part of December, in West Virginia.

DR. H. V. BOYCE, an employee of the Bureau of Animal Industry of Sioux City, visited friends in Kansas City during holiday week.

WE hear that Dr. Olof Schwarzkopf, while at Tokio, Japan, received a wound in his hand, which became infected, and he had a serious time with it for a number of days, finally recovering. He has, we believe, been ordered to Manila, P. I.

HORSE POWER SUPPLANTS THE AUTO.—The extensive cab business of R. H. White & Co., of Boston, which has been employing twenty-eight automobiles in its service, has dismissed them and gone back to the horse as a motive power.

ON account of continued illness in the family of Dr. Joseph W. Parker, of South St. Joseph, Mo., he has been obliged to resign his position as Secretary of the Missouri Valley Veterinary Medical Association. Dr. W. Ross Cooper, 1714 Kansas Avenue, Kansas City, Mo., has been appointed to fill the vacancy.

DR. RUSH S. HUIDEKOPER, who has worked so hard to secure the passage of the veterinary army bill through Congress, was confined to his bed for ten days during November through an attack of pneumonia; but nothing daunted he kept up an energetic fusilade from his sick bed, and used his convalescent period for greater exertions.

MR. ALEXANDER EGER, of Chicago, known to veterinarians from Maine to California through his long connection with the Chicago Veterinary College and as a dealer in and publisher of veterinary books, will throw off the dignity of bachelorhood for the glories of a benedict on the 2d inst., the fortunate lady being Miss Vilma Glick, of Calumet Avenue, Chicago. We wish the happy couple all the joy that is possible for the world to bestow.

DR. JAMES T. GLENNON and Miss Mary E. Quinn, both of Newark, N. J., are announced to be married on Wednesday morning, January 2, at St. Michael's church, of that city. Dr. Glennon is a successful practitioner of Newark and is a highly esteemed member of the Veterinary Medical Association of New Jersey. He was one of those who so ably assisted Dr. Lowe last year in the great work of organizing the profession of the State into one strong harmonious body. Dr. Glennon has the best wishes of many friends.

THE VETERINARIANS OF MISSOURI are united in an effort to secure the enactment of a veterinary law at the hands of the State Legislature during the session to begin January 2. The only opposition that the measure is likely to receive will come from an institution which desires to profit by a low standard of education. The bill provides that all new comers after the law goes into effect shall submit to an examination, also be graduates of a school requiring attendance of three sessions. The interests of the State Association are being carefully looked after by a most excellent committee composed of Drs. F. W. O'Brien, Chairman and ex-Mayor of Hannibal, T. F. Arnold, Lewistown, and D. F. Lucky, Columbia, State Veterinarian. The measure is being thoroughly placed before the members of the Legislature, and large and influential stock owners throughout the State are being interested in the measure. An almost identical bill was introduced into the Legislature two years ago, but for want of general support was lost in committee.

SO-CALLED CEREBRO-SPINAL MENINGITIS.—Dr. Leonard Pearson, State Veterinarian of Pennsylvania, in November *Journal*, describes some investigations of the disease known as

cerebro-spinal meningitis, characterized by paralysis of the throat with progressive paresis, and death in a few days, which by most observers has been suspected to be due to diseased food, but without a single instance of proof. Visiting a farm where five horses had died, he secured some of the silage upon which the dead horses had been fed, and took it to the hospital of th University of Pennsylvania for experiment. Half a bushel of it was fed to a nine-year-old gelding, from Oct. 30 to Nov. 2. On Nov. 3 there was well-marked paresis of the throat and muscles of mastication, twitching of flank muscles, desire to lie down and difficulty in arising. Symptoms gradually increased, animal dying Nov. 4. A ten-year-old horse healthy but for ringbones, was on Nov. 5 given four gallons of water that had percolated through a bushel of silage; Nov. 6, three gallons of water from same silage; Nov. 8, six quarts of silage. Nov. 9 he chewed and swallowed slowly, trembling of muscles, partial paralysis of throat, laid down most of time. Nov. 10, found dead. Autopsy in each case proved negative except for swelling and dark red, almost black color of mucosa of pharynx and glottis, stomach congested and contents putrid; appeared to be an excess of cerebro-spinal fluid. Brain, cord, and meninges normal. He suggests the name of "forage poisoning."

"AND THE ASS OPENED HIS MOUTH AND SPAKE."—Some valued correspondent in Washington sent us a copy of New York *Life* of Dec. 6, with the following article marked. Out of courtesy to our unknown friend, we reproduce it, with the suggestion that in all probability the society reporter who wrote the item is more competent to describe the costumes of the ladies than he is to predict the future of the horse: "The Harvard Veterinary School has given preliminary notice of its intention to shut down as soon as its present students have finished their course. It doesn't say that the automobile has killed it. It says—or its friends say for it—that it has been running at a loss for eighteen years, and cannot keep on without an endowment. Now, no one believes that the horse is to be relegated to the museums right away, but it is conceivable that the increase and the obvious usefulness of automobiles, as we know them, and the prospect that they will be cheapened, improved and multiplied indefinitely, should discourage hope that any benefactor will consecrate a large sum of money for all time to the work of training horse doctors, Veterinary instruction was never so good, or so thorough, or so scientific, as now, but with the street-car horse abolished.

the cab horse getting scarcer all the time, the canal mule disappearing, the delivery-wagon horse doomed and the truck horse threatened, horse doctoring seems likely to progress into the class of elegant and learned, but unremunerative, occupations which are fitter to attract endowed students than persons who expect to earn a living."

STANDARDIZATION OF DRUGS.—What right has any firm, whose business is to furnish the veterinarian with his principal weapons, to place upon the market pharmaceutical preparations of unknown medicinal value? Should we not expect, yes, even demand, that the producer of fluid extracts make his products conform to some standard of excellence—that he shall indicate what effects his fluid extracts may be expected to have ere he sends them forth from his laboratory? It has been shown that even drugs selected with care vary most extraordinarily in their percentage of active principles. Witness, for example, this statement by the editor of the *Bulletin of Pharmacy:* "Professor Puckner assayed nineteen samples of belladonna leaves procured, mind you, from dealers who were told that only the best was wanted, and that purchase would depend upon the results of assay. He found these nineteen samples to range in alkaloidal content from .01 to .51 per cent.! The strongest sample fifty-one times as strong as the weakest." The most careful treatment of such drugs, with the choicest menstrua, and by the most approved processes, will yield preparations that may be fair to look upon, but in medicinal value they will vary just as much as the crude drugs from which they are made. The compensatory remedy for this unfortunate condition is standardization—chemical standardization when practicable, and when that method is inadmissible, as it often is, physiological standardization. It has been found that certain important drugs cannot be assayed chemically, as their medicinal virtues reside in unstable bodies, and these are readily decomposed in the analytical processes. For this reason the strength of such powerful and useful drugs as digitalis, aconite, convallaria, strophanthus, ergot, cannabis Indica and many others, cannot be determined satisfactorily by the analytical chemist. However, the problem which proved to be an insurmountable difficulty to the chemist, was solved by the pharmacologist with ease. He tests upon living animals all drugs that cannot be assayed chemically. Dogs, rabbits, fowls and guinea-pigs receive doses of the preparations under examination. Accurate observations of their physiologic effects are

made, variations are noted and corrected, until the preparations correspond in medicinal strength with the adopted standard extracts. The name of one of the greatest pharmaceutical manufacturing houses in this country is so closely linked with the phrase "drug standardization," that the mere mention of one suggests the other. Parke, Davis & Co. began years ago to manufacture a full line of standardized fluid extracts that are guaranteed to be of definite and uniform strength. More recently they devised and perfected methods for standardizing physiologically those important drugs that are incapable of analysis by chemical processes. Parke, Davis & Co. have done a great deal for the medical profession and for humanity, and standardization, more especially physiological standardization, is one of their greatest achievements.

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I have the following duplicate numbers of the AMERICAN VETERINARY REVIEW, which I would like to exchange for numbers *below* Vol. X:—Vol. XI, No. 5; Vol. XIV, No. 3; Vol. XV, Nos. 3 and 5; Vol. XVIII, No. 5; Vol. XIX, Nos. 11 and 12; Vol. XX, No. 2; Vol. XXI, No. 2; Vol. XXII, No. 1; Vol. XXIII, No. 6. Correspondence solicited for earlier volumes. Address WM. H. GRIBBLE, D.V.S., Washington C. H., Ohio.

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